



# Full wwPDB X-ray Structure Validation Report

Mar 31, 2014 – 05:34 PM BST

PDB ID : 2B64  
Title : 30S ribosomal subunit, tRNAs, mRNA and release factor RF1 from a crystal structure of the whole ribosomal complex. This file contains the 30S subunit, tRNAs, mRNA and release factor RF1 from a crystal structure of the whole ribosomal complex". The entire crystal structure contains one 70S ribosome, tRNAs, mRNA and release factor RF1 and is described in remark 400.  
Authors : Petry, S.; Brodersen, D.E.; Murphy IV, F.V.; Dunham, C.M.; Selmer, M.; Tarry, M.J.; Kelley, A.C.; Ramakrishnan, V.  
Deposited on : 2005-09-30  
Resolution : 5.90 Å(reported)

This is a full wwPDB validation report for a publicly released PDB entry.  
We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)  
A user guide is available at <http://wwpdb.org/ValidationPDFNotes.html>

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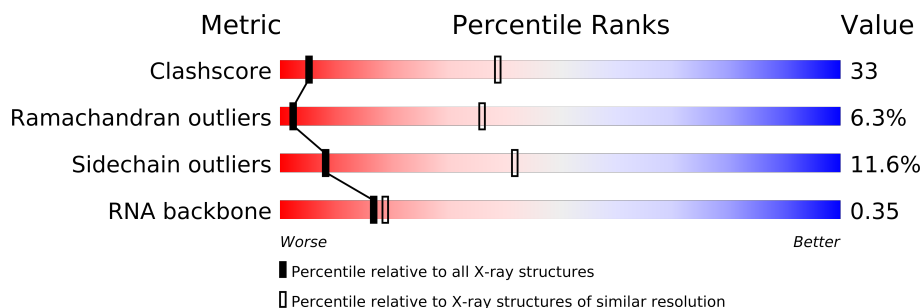
The following versions of software and data (see [references](#)) were used in the production of this report:

MolProbity : 4.02b-467  
Mogul : 1.15 2013  
Xtriage (Phenix) : dev-1323  
EDS : **NOT EXECUTED**  
Percentile statistics : 21963  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et. al. (1996)  
Validation Pipeline (wwPDB-VP) : stable23004

# 1 Overall quality at a glance

The reported resolution of this entry is 5.90 Å.

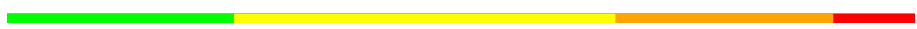

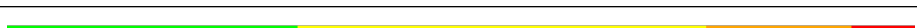




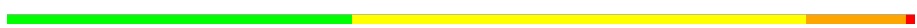
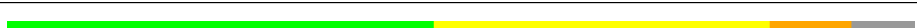

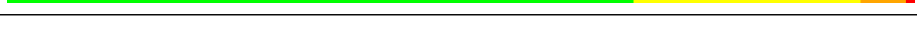



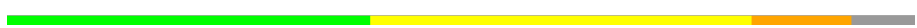
Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
Clashscore	79885	1024 (8.20-3.52)
Ramachandran outliers	78287	1282 (8.20-3.50)
Sidechain outliers	78261	1258 (8.20-3.50)
RNA backbone	1838	1042 (8.70-2.80)


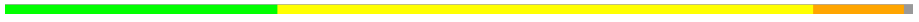


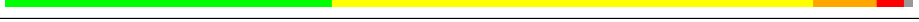

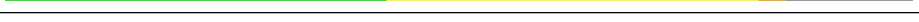

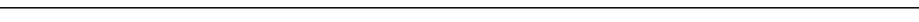

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments on the lower bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density.

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	A	1522	
2	V	76	
3	W	76	
4	X	18	
5	B	256	
6	C	239	
7	D	209	
8	E	162	
9	F	101	
10	G	156	
11	H	138	
12	I	128	
13	J	105	
14	K	129	
15	L	135	

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Mol	Chain	Length	Quality of chain
16	M	126	
17	N	61	
18	O	89	
19	P	88	
20	Q	105	
21	R	88	
22	S	93	
23	T	106	
24	U	27	
25	Y	354	

## 2 Entry composition

There are 25 unique types of molecules in this entry. The entry contains 55511 atoms, of which 0 are hydrogen and 0 are deuterium.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	1515	Total	C	N	O	P	0	0	0
			32551	14490	6022	10525	1514			

- Molecule 2 is a RNA chain called P-site tRNA (Phe).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	V	76	Total	C	N	O	P	0	0	0
			1622	725	293	529	75			

- Molecule 3 is a RNA chain called E-site tRNA (Phe).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	W	76	Total	C	N	O	P	0	0	0
			1638	736	294	533	75			

- Molecule 4 is a RNA chain called 5'-R(\*AP\*UP\*GP\*UP\*UP\*CP\*UP\*AP\*GP\*UP\*AP\*C  
P\*AP\*AP\*UP\*AP\*AP\*U)-3'.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	X	17	Total	C	N	O	P	0	0	11
			136	56	19	44	17			

- Molecule 5 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
5	B	234	Total	C	N	O	S	0	0	0
			1900	1213	341	341	5			

- Molecule 6 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
6	C	206	Total	C	N	O	S	0	0	0
			1612	1016	314	281	1			

- Molecule 7 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
7	D	208	Total	C	N	O	S	0	0	0
			1703	1066	339	291	7			

- Molecule 8 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
8	E	150	Total	C	N	O	S	0	0	0
			1146	724	217	201	4			

- Molecule 9 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
9	F	101	Total	C	N	O	S	0	0	0
			843	531	155	154	3			

- Molecule 10 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
10	G	155	Total	C	N	O	S	0	0	0
			1257	781	252	218	6			

- Molecule 11 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
11	H	138	Total	C	N	O	S	0	0	0
			1116	705	215	193	3			

- Molecule 12 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
12	I	127	Total	C	N	O		0	0	0
			1011	639	198	174				

- Molecule 13 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
13	J	98	Total	C	N	O	S	0	0	0
			794	499	156	138	1			

- Molecule 14 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
14	K	119	Total	C	N	O	S	0	0	0
			885	549	168	165	3			

- Molecule 15 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
15	L	124	Total	C	N	O	S	0	0	0
			970	611	195	163	1			

- Molecule 16 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
16	M	125	Total	C	N	O	S	0	0	0
			997	617	207	171	2			

- Molecule 17 is a protein called 30S ribosomal protein S14.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
17	N	60	Total	C	N	O	S	0	0	0
			492	312	104	72	4			

- Molecule 18 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
18	O	88	Total	C	N	O	S	0	0	0
			734	459	147	126	2			

- Molecule 19 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
19	P	83	Total	C	N	O	S	0	0	0
			700	443	139	117	1			

- Molecule 20 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
20	Q	104	Total	C	N	O	S	0	0	0
			857	547	161	147	2			

- Molecule 21 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
21	R	73	Total	C	N	O		0	0	0
			597	380	118	99				

- Molecule 22 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
22	S	80	Total	C	N	O	S	0	0	0
			647	414	119	112	2			

- Molecule 23 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
23	T	99	Total	C	N	O	S	0	0	0
			762	469	162	129	2			

- Molecule 24 is a protein called 30S ribosomal protein Thx.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
24	U	24	Total	C	N	O	0	0	0
			208	128	50	30			

- Molecule 25 is a protein called Peptide chain release factor 1.

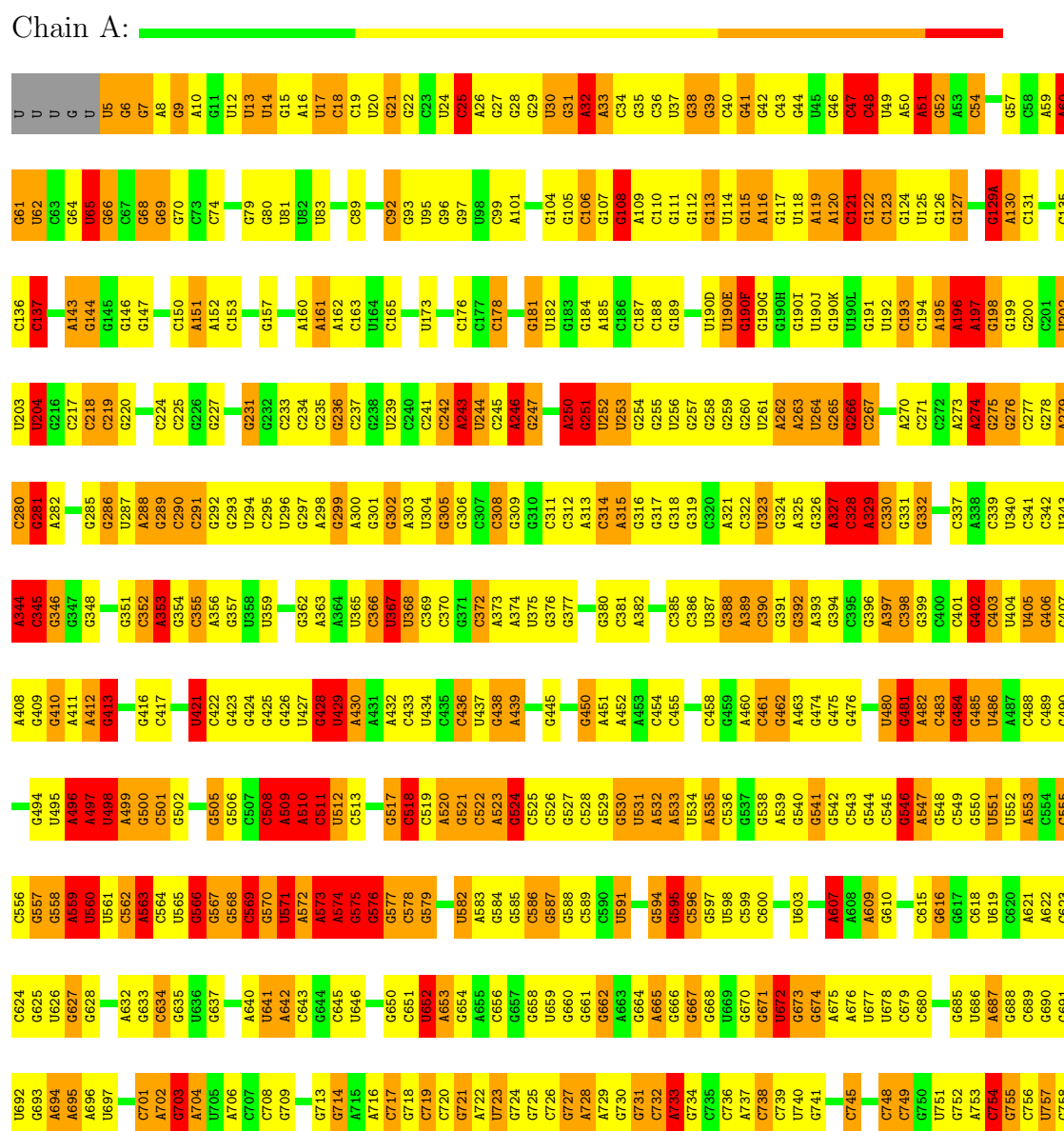
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
25	Y	333	Total	C	0	0	333
			333	333			

### 3 Residue-property plots

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ( $\text{RSRZ} > 2$ ). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

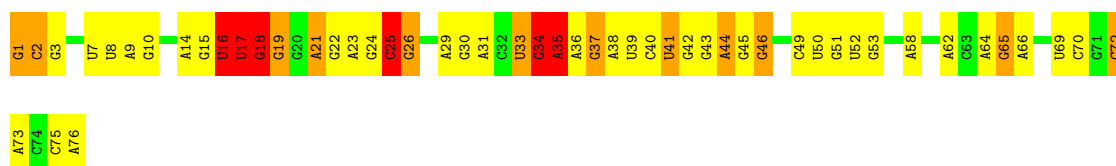
Note EDS was not executed.

#### • Molecule 1: 16S ribosomal RNA



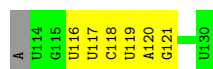






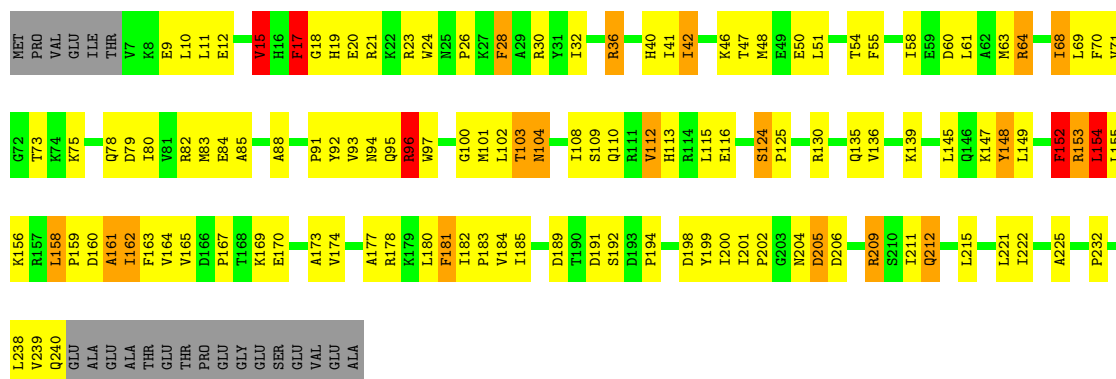
- Molecule 4: 5'-R(\*AP\*UP\*GP\*UP\*UP\*CP\*UP\*AP\*GP\*UP\*AP\*CP\*AP\*AP\*UP\*AP\*AP\*U)-3'

Chain X:



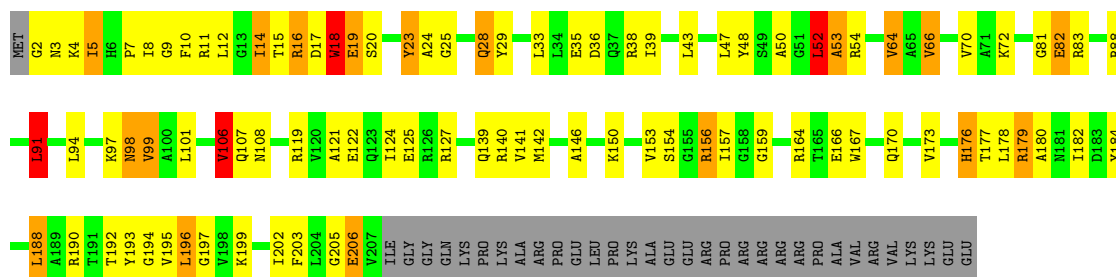
- Molecule 5: 30S ribosomal protein S2

Chain B:



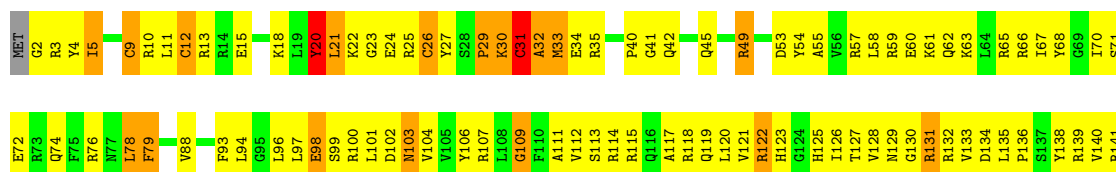
- Molecule 6: 30S ribosomal protein S3

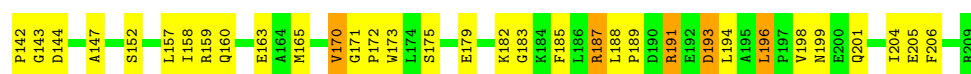
Chain C:



- Molecule 7: 30S ribosomal protein S4

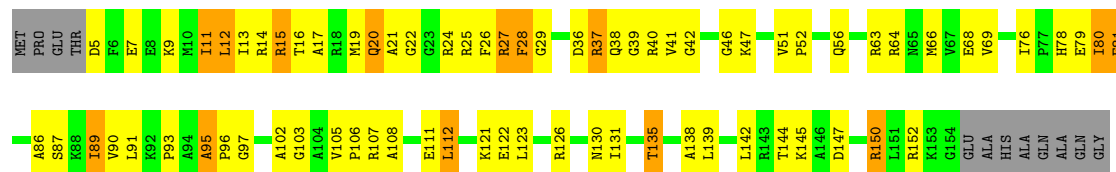
Chain D:





• Molecule 8: 30S ribosomal protein S5

Chain E:



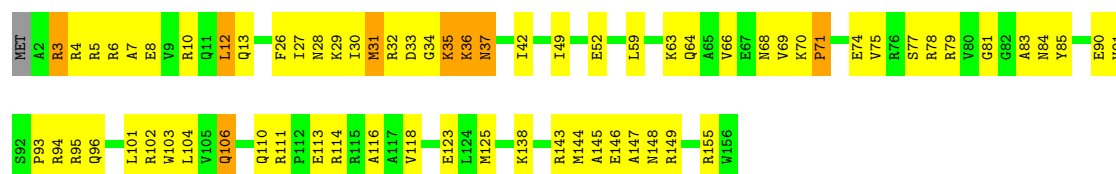
• Molecule 9: 30S ribosomal protein S6

Chain F:



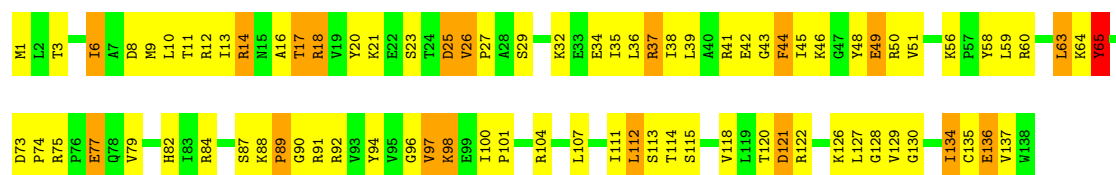
• Molecule 10: 30S ribosomal protein S7

Chain G:



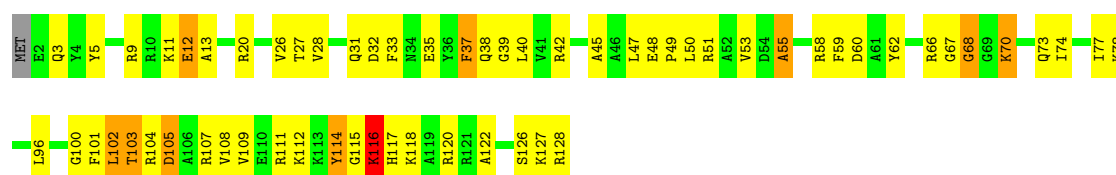
• Molecule 11: 30S ribosomal protein S8

Chain H:



• Molecule 12: 30S ribosomal protein S9

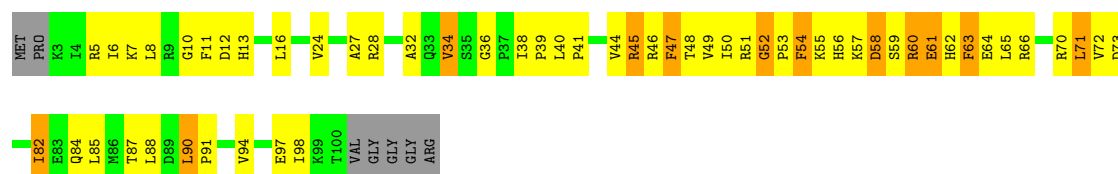
Chain I:



• Molecule 13: 30S ribosomal protein S10

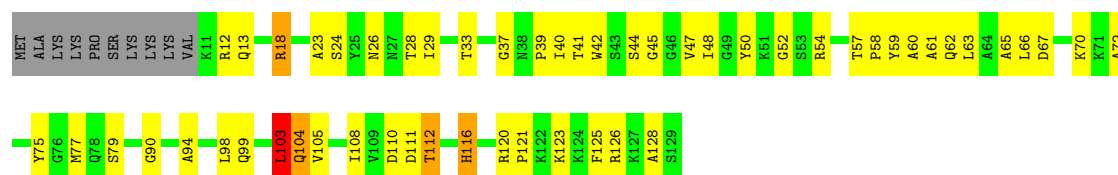
Chain J:





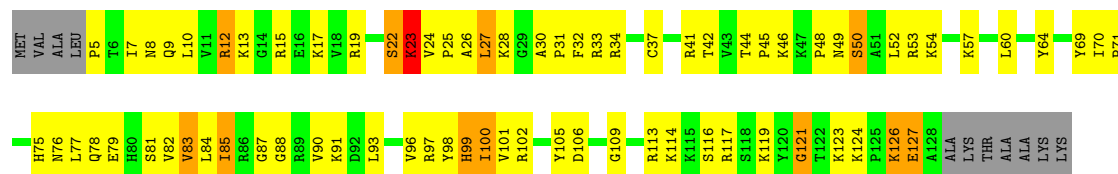
• Molecule 14: 30S ribosomal protein S11

Chain K:



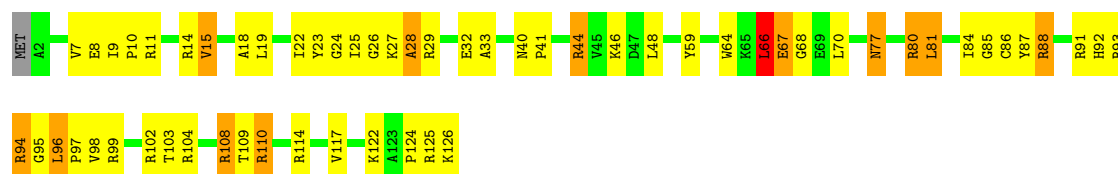
• Molecule 15: 30S ribosomal protein S12

Chain L:



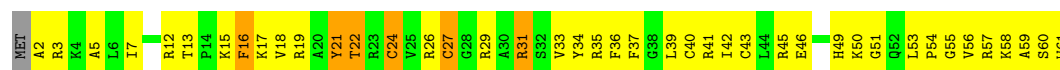
• Molecule 16: 30S ribosomal protein S13

Chain M:



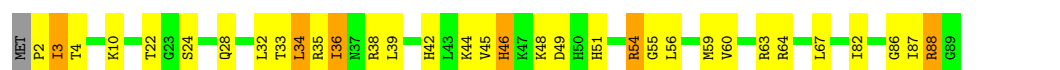
• Molecule 17: 30S ribosomal protein S14

Chain N:



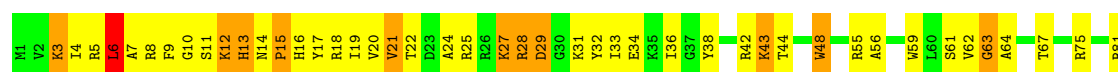
• Molecule 18: 30S ribosomal protein S15

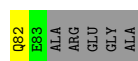
Chain O:



• Molecule 19: 30S ribosomal protein S16

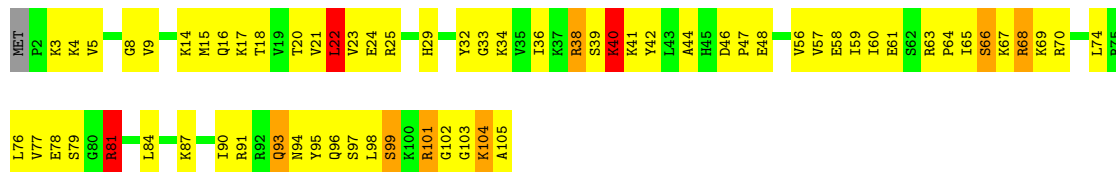
Chain P:





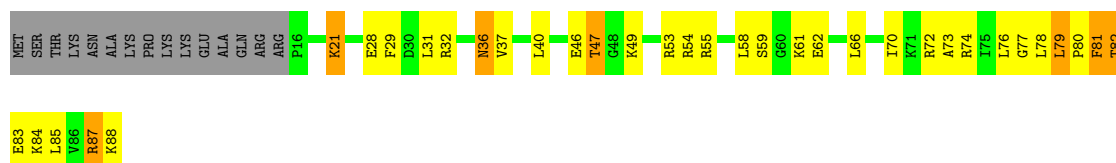
- Molecule 20: 30S ribosomal protein S17

Chain Q:



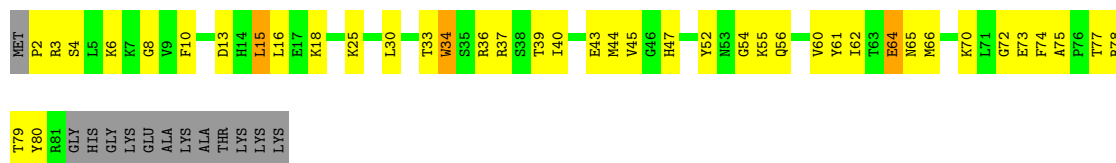
- Molecule 21: 30S ribosomal protein S18

Chain R:



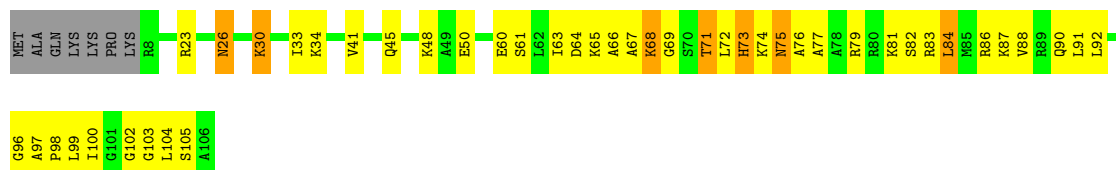
- Molecule 22: 30S ribosomal protein S19

Chain S:



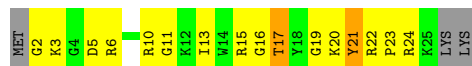
- Molecule 23: 30S ribosomal protein S20

Chain T:



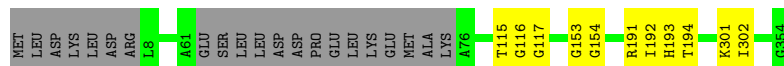
- Molecule 24: 30S ribosomal protein Thx

Chain U:



- Molecule 25: Peptide chain release factor 1

Chain Y:



## 4 Data and refinement statistics

EDS was not executed - this section will therefore be incomplete.

Property	Value	Source
Space group	P 43 21 2	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	518.99Å 518.99Å 365.14Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	40.00 – 5.90	Depositor
% Data completeness (in resolution range)	97.4 (40.00-5.90)	Depositor
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	0.13	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.41 (at 5.39Å)	Xtriage
Refinement program	CNS	Depositor
R, $R_{free}$	0.351 , 0.371	Depositor
Wilson B-factor (Å <sup>2</sup> )	223.1	Xtriage
Anisotropy	0.185	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
L-test for twinning	$\langle  L  \rangle = 0.47$ , $\langle L^2 \rangle = 0.29$	Xtriage
Outliers	0 of 148368 reflections	Xtriage
Total number of atoms	55511	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	236.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.88% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

## 5 Model quality ⓘ

### 5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: YYG, PSU

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 5$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z  > 5$	RMSZ	$\# Z  > 5$
1	A	1.25	68/36411 (0.2%)	1.47	415/56769 (0.7%)
2	V	2.34	3/1813 (0.2%)	1.16	11/2823 (0.4%)
3	W	1.82	17/1739 (1.0%)	1.97	36/2698 (1.3%)
4	X	0.18	0/139	0.66	0/213
5	B	0.63	1/1935 (0.1%)	0.66	4/2609 (0.2%)
6	C	0.60	2/1636 (0.1%)	1.10	6/2205 (0.3%)
7	D	0.65	4/1733 (0.2%)	0.97	9/2318 (0.4%)
8	E	0.46	0/1161	0.61	1/1561 (0.1%)
9	F	0.35	0/856	0.54	0/1154
10	G	0.60	1/1276 (0.1%)	0.59	2/1709 (0.1%)
11	H	0.41	0/1136	0.66	0/1527
12	I	0.34	0/1029	0.54	0/1378
13	J	0.35	0/807	0.56	0/1085
14	K	0.87	1/900 (0.1%)	0.56	0/1213
15	L	0.49	1/986 (0.1%)	0.70	1/1320 (0.1%)
16	M	1.15	2/1008 (0.2%)	1.16	3/1347 (0.2%)
17	N	0.49	1/501 (0.2%)	0.64	1/664 (0.2%)
18	O	0.32	0/745	0.54	0/992
19	P	0.40	0/716	0.59	1/963 (0.1%)
20	Q	1.15	2/870 (0.2%)	1.38	5/1159 (0.4%)
21	R	0.40	0/603	0.70	0/799
22	S	0.34	0/661	0.53	0/890
23	T	0.32	0/764	0.57	1/1006 (0.1%)
24	U	0.33	0/212	0.48	0/277
All	All	1.16	103/59637 (0.2%)	1.32	496/88679 (0.6%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
3	W	1	5
5	B	0	1
6	C	0	2
7	D	0	1
15	L	0	1
16	M	0	1
20	Q	0	2
All	All	1	13

All (103) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	V	45	G	O3'-P	-70.03	0.77	1.61
2	V	65	G	O3'-P	-62.91	0.85	1.61
1	A	1211	U	O3'-P	-53.33	0.97	1.61
1	A	60	A	O3'-P	49.05	2.20	1.61
1	A	983	A	O3'-P	44.90	2.15	1.61
1	A	115	G	O3'-P	42.42	2.12	1.61
1	A	196	A	O3'-P	41.70	2.11	1.61
1	A	733	A	O3'-P	39.11	2.08	1.61
1	A	405	U	O3'-P	38.53	2.07	1.61
1	A	587	G	O3'-P	36.16	2.04	1.61
1	A	937	A	O3'-P	36.09	2.04	1.61
1	A	1182	G	O3'-P	-36.05	1.17	1.61
3	W	21	A	O3'-P	-34.93	1.19	1.61
1	A	576	G	O3'-P	33.62	2.01	1.61
16	M	94	ARG	C-N	33.29	1.93	1.33
1	A	239	U	O3'-P	-31.76	1.23	1.61
1	A	703	G	O3'-P	31.74	1.99	1.61
1	A	1361	G	O3'-P	31.70	1.99	1.61
2	V	7	U	O3'-P	31.14	1.98	1.61
20	Q	22	LEU	C-N	-30.20	0.64	1.34
1	A	1255	G	O3'-P	-28.89	1.26	1.61
1	A	869	G	O3'-P	-28.33	1.27	1.61
1	A	351	G	O3'-P	-27.27	1.28	1.61
1	A	288	A	O3'-P	-26.68	1.29	1.61
1	A	1030	C	O3'-P	25.66	1.92	1.61
1	A	1101	A	O3'-P	25.45	1.91	1.61
1	A	286	G	O3'-P	24.31	1.90	1.61
1	A	1504	G	O3'-P	-24.05	1.32	1.61
14	K	112	THR	C-N	-23.71	0.89	1.34
1	A	820	U	O3'-P	23.62	1.89	1.61
1	A	119	A	O3'-P	23.00	1.88	1.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	960	U	O3'-P	-22.35	1.34	1.61
5	B	112	VAL	C-N	22.32	1.85	1.34
1	A	1046	A	O3'-P	21.94	1.87	1.61
1	A	569	C	O3'-P	-20.91	1.36	1.61
1	A	1337	G	O3'-P	-19.63	1.37	1.61
1	A	1003	G	O3'-P	19.56	1.84	1.61
3	W	46	G	C8-N7	19.41	1.42	1.30
1	A	546	G	O3'-P	19.25	1.84	1.61
1	A	1298	C	O3'-P	18.95	1.83	1.61
3	W	25	C	O3'-P	18.76	1.83	1.61
1	A	858	G	O3'-P	-18.61	1.38	1.61
3	W	16	U	C5-C6	18.60	1.50	1.34
10	G	12	LEU	C-N	17.98	1.75	1.34
1	A	25	C	O3'-P	17.91	1.82	1.61
3	W	58	A	C6-N6	17.88	1.48	1.33
1	A	884	U	O3'-P	-17.87	1.39	1.61
1	A	765	G	O3'-P	-17.59	1.40	1.61
1	A	558	G	O3'-P	17.06	1.81	1.61
3	W	17	U	C5-C6	17.05	1.49	1.34
1	A	337	C	O3'-P	16.98	1.81	1.61
3	W	44	A	O3'-P	-16.87	1.41	1.61
3	W	72	C	O3'-P	-16.78	1.41	1.61
3	W	33	U	O3'-P	-16.63	1.41	1.61
1	A	143	A	O3'-P	16.02	1.80	1.61
1	A	827	U	O3'-P	15.82	1.80	1.61
1	A	1107	C	O3'-P	15.65	1.79	1.61
6	C	106	VAL	C-N	-15.44	0.98	1.34
1	A	38	G	O3'-P	-15.15	1.43	1.61
7	D	98	GLU	C-N	-14.61	1.00	1.34
1	A	974	A	O3'-P	14.32	1.78	1.61
3	W	58	A	C6-N1	13.86	1.45	1.35
1	A	1377	A	O3'-P	-13.31	1.45	1.61
1	A	1117	G	O3'-P	12.89	1.76	1.61
1	A	108	G	O3'-P	11.98	1.75	1.61
1	A	311	C	O3'-P	11.52	1.75	1.61
1	A	315	A	O3'-P	11.50	1.75	1.61
6	C	18	TRP	C-N	-11.48	1.07	1.34
1	A	1189	C	O3'-P	11.29	1.74	1.61
3	W	16	U	N1-C6	11.04	1.47	1.38
3	W	17	U	N1-C6	10.88	1.47	1.38
1	A	394	G	O3'-P	10.82	1.74	1.61
1	A	754	C	O3'-P	10.81	1.74	1.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	W	46	G	N9-C8	10.59	1.45	1.37
16	M	66	LEU	C-N	10.45	1.58	1.34
7	D	187	ARG	C-N	10.13	1.57	1.34
1	A	365	U	O3'-P	-10.09	1.49	1.61
3	W	17	U	C4-C5	10.06	1.52	1.43
1	A	1067	A	O3'-P	-9.83	1.49	1.61
1	A	1278	U	O3'-P	-9.50	1.49	1.61
20	Q	81	ARG	C-N	9.35	1.55	1.34
1	A	1396	A	O3'-P	-8.78	1.50	1.61
3	W	16	U	C4-C5	8.30	1.51	1.43
3	W	35	A	O3'-P	8.07	1.70	1.61
1	A	243	A	C3'-O3'	8.06	1.53	1.42
1	A	913	A	O3'-P	-8.03	1.51	1.61
7	D	31	CYS	CB-SG	6.84	1.93	1.82
1	A	1085	U	O3'-P	-6.81	1.52	1.61
1	A	497	A	O3'-P	6.78	1.69	1.61
15	L	23	LYS	C-N	-6.62	1.18	1.34
3	W	58	A	C5-C6	6.60	1.47	1.41
1	A	776	G	O3'-P	6.43	1.68	1.61
1	A	879	C	O3'-P	6.17	1.68	1.61
1	A	804	U	O3'-P	-5.96	1.53	1.61
1	A	789	U	C1'-N1	5.39	1.56	1.48
7	D	26	CYS	CB-SG	5.38	1.91	1.82
1	A	115	G	C3'-O3'	5.31	1.49	1.42
1	A	366	C	C3'-O3'	5.30	1.49	1.42
1	A	703	G	C3'-O3'	5.16	1.49	1.42
1	A	1101	A	C3'-O3'	5.08	1.49	1.42
1	A	687	A	O3'-P	-5.00	1.55	1.61
1	A	904	C	C1'-N1	5.00	1.56	1.48
17	N	27	CYS	CB-SG	5.00	1.90	1.82

All (496) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	196	A	P-O3'-C3'	44.40	172.99	119.70
3	W	25	C	O3'-P-O5'	-43.47	21.42	104.00
1	A	1030	C	OP2-P-O3'	-27.93	43.76	105.20
3	W	33	U	P-O3'-C3'	27.31	152.47	119.70
3	W	35	A	P-O3'-C3'	27.09	152.20	119.70
2	V	25	C	P-O3'-C3'	-26.85	87.48	119.70
1	A	1030	C	P-O3'-C3'	25.67	150.50	119.70
2	V	65	G	P-O3'-C3'	25.39	150.17	119.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
20	Q	22	LEU	CA-C-N	-25.06	62.07	117.20
6	C	106	VAL	CA-C-N	-24.19	63.99	117.20
1	A	1211	U	P-O3'-C3'	23.74	148.18	119.70
1	A	1004	A	P-O3'-C3'	23.17	147.50	119.70
3	W	17	U	C5-C6-N1	-23.10	111.15	122.70
6	C	18	TRP	O-C-N	-22.93	86.02	122.70
16	M	94	ARG	O-C-N	22.84	162.03	123.20
1	A	983	A	P-O3'-C3'	-22.40	92.83	119.70
1	A	178	C	P-O3'-C3'	22.27	146.43	119.70
1	A	1046	A	P-O3'-C3'	-22.25	93.00	119.70
1	A	1030	C	OP1-P-O3'	21.12	151.67	105.20
3	W	16	U	C5-C6-N1	-20.88	112.26	122.70
16	M	94	ARG	CA-C-N	-20.79	74.62	116.20
6	C	106	VAL	C-N-CA	-20.51	70.42	121.70
6	C	106	VAL	O-C-N	20.35	155.26	122.70
16	M	94	ARG	C-N-CA	-20.30	79.66	122.30
1	A	196	A	OP2-P-O3'	-20.19	60.77	105.20
20	Q	22	LEU	C-N-CA	-20.17	71.27	121.70
3	W	25	C	P-O3'-C3'	20.11	143.83	119.70
1	A	196	A	O3'-P-O5'	19.61	141.25	104.00
1	A	436	C	O3'-P-O5'	-19.46	67.02	104.00
20	Q	22	LEU	O-C-N	19.45	153.82	122.70
3	W	21	A	P-O3'-C3'	18.49	141.89	119.70
1	A	1085	U	P-O3'-C3'	18.24	141.59	119.70
1	A	913	A	P-O3'-C3'	17.61	140.84	119.70
7	D	98	GLU	O-C-N	17.28	150.35	122.70
3	W	72	C	OP2-P-O3'	16.79	142.13	105.20
1	A	1337	G	P-O3'-C3'	16.49	139.49	119.70
2	V	45	G	O3'-P-O5'	16.41	135.19	104.00
7	D	187	ARG	O-C-N	16.05	148.39	122.70
1	A	960	U	P-O3'-C3'	15.74	138.59	119.70
1	A	1182	G	OP2-P-O3'	15.53	139.36	105.20
1	A	1182	G	P-O3'-C3'	-15.48	101.13	119.70
1	A	497	A	OP2-P-O3'	-15.29	71.57	105.20
1	A	558	G	OP1-P-O3'	-15.01	72.18	105.20
2	V	25	C	O3'-P-O5'	14.59	131.73	104.00
3	W	35	A	OP1-P-O3'	14.52	137.15	105.20
1	A	869	G	P-O3'-C3'	14.06	136.57	119.70
3	W	65	G	O3'-P-O5'	-14.03	77.35	104.00
1	A	1107	C	P-O3'-C3'	-13.88	103.04	119.70
1	A	1211	U	OP2-P-O3'	13.88	135.75	105.20
1	A	436	C	P-O3'-C3'	-13.77	103.17	119.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1278	U	P-O3'-C3'	13.61	136.03	119.70
20	Q	40	LYS	CA-C-N	-13.59	87.31	117.20
1	A	405	U	O3'-P-O5'	-13.46	78.43	104.00
1	A	243	A	P-O3'-C3'	13.43	135.81	119.70
1	A	286	G	P-O3'-C3'	13.23	135.58	119.70
3	W	58	A	N1-C6-N6	13.16	126.50	118.60
7	D	98	GLU	CA-C-N	-12.77	89.11	117.20
3	W	33	U	OP1-P-O3'	12.75	133.25	105.20
2	V	65	G	OP1-P-O3'	12.57	132.86	105.20
1	A	288	A	O3'-P-O5'	-12.54	80.17	104.00
1	A	813	U	P-O3'-C3'	12.47	134.67	119.70
3	W	65	G	OP2-P-O3'	12.37	132.42	105.20
2	V	25	C	OP1-P-O3'	-12.37	78.00	105.20
1	A	983	A	OP2-P-O3'	12.21	132.05	105.20
1	A	38	G	OP1-P-O3'	12.17	131.97	105.20
3	W	58	A	C4-C5-C6	12.16	123.08	117.00
1	A	108	G	O3'-P-O5'	12.06	126.92	104.00
20	Q	40	LYS	C-N-CA	-12.06	91.55	121.70
1	A	703	G	P-O3'-C3'	12.03	134.13	119.70
7	D	187	ARG	CA-C-N	-12.01	90.78	117.20
3	W	17	U	C4-C5-C6	-11.97	112.52	119.70
1	A	497	A	OP1-P-O3'	11.95	131.50	105.20
1	A	1046	A	O3'-P-O5'	11.95	126.71	104.00
1	A	288	A	OP1-P-O3'	11.80	131.16	105.20
2	V	45	G	P-O3'-C3'	11.68	133.72	119.70
3	W	21	A	OP1-P-O3'	11.60	130.72	105.20
1	A	1337	G	OP2-P-O3'	-11.56	79.77	105.20
2	V	65	G	OP2-P-O3'	-11.55	79.80	105.20
3	W	65	G	P-O3'-C3'	-11.50	105.90	119.70
3	W	46	G	N7-C8-N9	-11.49	107.35	113.10
1	A	1396	A	P-O3'-C3'	-11.32	106.11	119.70
1	A	178	C	OP2-P-O3'	-11.21	80.54	105.20
3	W	1	G	P-O3'-C3'	11.11	133.04	119.70
1	A	311	C	OP2-P-O3'	11.04	129.49	105.20
1	A	1345	U	P-O3'-C3'	10.81	132.67	119.70
1	A	1182	G	OP1-P-O3'	-10.81	81.43	105.20
1	A	983	A	OP1-P-O3'	-10.75	81.54	105.20
1	A	575	G	P-O3'-C3'	10.75	132.60	119.70
3	W	33	U	O3'-P-O5'	-10.58	83.90	104.00
1	A	1046	A	OP1-P-O3'	-10.41	82.29	105.20
1	A	1201	A	P-O3'-C3'	10.37	132.15	119.70
3	W	58	A	C5-C6-N1	-10.37	112.52	117.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	121	C	P-O3'-C3'	10.35	132.12	119.70
1	A	818	G	O4'-C1'-N9	10.27	116.42	108.20
1	A	944	G	P-O3'-C3'	-10.16	107.50	119.70
7	D	98	GLU	C-N-CA	-10.13	96.38	121.70
1	A	178	C	OP1-P-O3'	10.08	127.38	105.20
1	A	717	C	P-O3'-C3'	-10.07	107.62	119.70
1	A	509	A	P-O3'-C3'	10.03	131.74	119.70
3	W	25	C	OP1-P-O3'	10.02	127.23	105.20
1	A	1377	A	OP2-P-O3'	10.00	127.20	105.20
3	W	16	U	C4-C5-C6	-9.96	113.72	119.70
1	A	1064	G	C1'-O4'-C4'	-9.94	101.95	109.90
7	D	26	CYS	CA-CB-SG	9.92	131.85	114.00
1	A	944	G	OP2-P-O3'	9.88	126.94	105.20
1	A	1278	U	OP2-P-O3'	9.86	126.90	105.20
1	A	793	U	C1'-O4'-C4'	-9.85	102.02	109.90
1	A	328	C	P-O3'-C3'	9.81	131.47	119.70
7	D	187	ARG	C-N-CA	-9.72	97.39	121.70
1	A	311	C	O3'-P-O5'	-9.69	85.59	104.00
1	A	687	A	P-O3'-C3'	9.67	131.30	119.70
3	W	35	A	OP2-P-O3'	-9.66	83.95	105.20
3	W	34	G	O3'-P-O5'	9.63	122.29	104.00
1	A	1211	U	OP1-P-O3'	-9.53	84.23	105.20
3	W	44	A	OP2-P-O3'	9.52	126.15	105.20
3	W	72	C	O3'-P-O5'	-9.51	85.92	104.00
2	V	7	U	OP1-P-O3'	9.49	126.08	105.20
1	A	813	U	O3'-P-O5'	9.46	121.97	104.00
1	A	974	A	O3'-P-O5'	9.43	121.92	104.00
1	A	1337	G	O3'-P-O5'	9.40	121.86	104.00
1	A	566	G	O3'-P-O5'	9.40	121.85	104.00
1	A	266	G	P-O3'-C3'	9.38	130.96	119.70
1	A	143	A	O3'-P-O5'	-9.36	86.22	104.00
1	A	366	C	P-O3'-C3'	9.35	130.91	119.70
1	A	372	C	P-O3'-C3'	9.34	130.91	119.70
1	A	812	C	P-O3'-C3'	9.33	130.89	119.70
3	W	34	G	OP2-P-O3'	-9.32	84.69	105.20
1	A	1505	G	P-O3'-C3'	9.25	130.80	119.70
1	A	1396	A	O3'-P-O5'	-9.24	86.45	104.00
1	A	1065	U	P-O3'-C3'	9.19	130.72	119.70
7	D	49	ARG	O-C-N	-9.10	108.15	122.70
1	A	1004	A	O3'-P-O5'	-9.08	86.74	104.00
1	A	817	C	P-O3'-C3'	9.07	130.59	119.70
1	A	914	A	C1'-O4'-C4'	-8.97	102.73	109.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	914	A	O4'-C1'-N9	8.97	115.37	108.20
1	A	717	C	OP1-P-O3'	8.90	124.78	105.20
1	A	869	G	O3'-P-O5'	8.84	120.80	104.00
1	A	1298	C	P-O3'-C3'	-8.78	109.16	119.70
1	A	1502	A	C1'-O4'-C4'	-8.73	102.92	109.90
1	A	563	A	C1'-O4'-C4'	-8.72	102.92	109.90
1	A	1298	C	OP2-P-O3'	-8.70	86.06	105.20
1	A	1117	G	P-O3'-C3'	8.63	130.06	119.70
1	A	518	C	P-O3'-C3'	8.63	130.05	119.70
1	A	197	A	P-O3'-C3'	8.58	130.00	119.70
1	A	1347	G	P-O3'-C3'	8.54	129.95	119.70
1	A	558	G	OP2-P-O3'	8.51	123.91	105.20
1	A	436	C	OP2-P-O3'	8.46	123.80	105.20
3	W	18	G	C5'-C4'-O4'	-8.45	98.96	109.10
1	A	1226	C	P-O3'-C3'	8.37	129.74	119.70
1	A	288	A	P-O3'-C3'	8.36	129.73	119.70
1	A	365	U	OP1-P-O3'	8.34	123.55	105.20
1	A	47	C	P-O3'-C3'	8.31	129.67	119.70
5	B	112	VAL	O-C-N	8.29	135.97	122.70
1	A	877	C	C3'-C2'-C1'	-8.29	94.87	101.50
1	A	889	A	P-O3'-C3'	8.29	129.64	119.70
1	A	560	U	P-O3'-C3'	8.28	129.63	119.70
1	A	559	A	P-O3'-C3'	8.18	129.52	119.70
1	A	1380	U	P-O3'-C3'	8.16	129.50	119.70
3	W	72	C	OP1-P-O3'	-8.16	87.25	105.20
1	A	119	A	P-O3'-C3'	8.15	129.48	119.70
1	A	1257	U	P-O3'-C3'	8.07	129.38	119.70
1	A	992	U	P-O3'-C3'	8.04	129.35	119.70
1	A	405	U	OP1-P-O3'	8.02	122.84	105.20
1	A	1346	A	P-O3'-C3'	7.98	129.27	119.70
1	A	484	G	P-O3'-C3'	7.98	129.27	119.70
1	A	558	G	O3'-P-O5'	7.97	119.15	104.00
1	A	246	A	P-O3'-C3'	7.95	129.24	119.70
1	A	499	A	P-O3'-C3'	7.90	129.18	119.70
1	A	535	A	P-O3'-C3'	7.90	129.18	119.70
1	A	1004	A	OP1-P-O3'	7.89	122.56	105.20
3	W	58	A	C6-C5-N7	-7.88	126.78	132.30
3	W	44	A	O3'-P-O5'	-7.88	89.04	104.00
1	A	1281	U	P-O3'-C3'	7.87	129.14	119.70
1	A	429	U	C1'-O4'-C4'	-7.85	103.62	109.90
1	A	274	A	P-O3'-C3'	7.84	129.11	119.70
1	A	60	A	OP1-P-O3'	7.81	122.39	105.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
15	L	23	LYS	O-C-N	-7.80	110.23	122.70
3	W	72	C	P-O3'-C3'	-7.74	110.41	119.70
1	A	251	G	P-O3'-C3'	7.74	128.99	119.70
1	A	129(A)	G	P-O3'-C3'	7.74	128.98	119.70
1	A	727	G	C3'-C2'-C1'	-7.72	95.33	101.50
1	A	820	U	P-O3'-C3'	7.69	128.92	119.70
1	A	965	A	P-O3'-C3'	7.69	128.92	119.70
1	A	190(F)	G	P-O3'-C3'	7.63	128.86	119.70
1	A	1298	C	O3'-P-O5'	7.59	118.41	104.00
1	A	927	G	C3'-C2'-C1'	-7.58	95.44	101.50
1	A	701	C	P-O3'-C3'	7.56	128.77	119.70
1	A	1049	U	P-O3'-C3'	7.55	128.76	119.70
1	A	863	U	C1'-O4'-C4'	-7.55	103.86	109.90
1	A	281	G	P-O3'-C3'	7.51	128.72	119.70
10	G	12	LEU	O-C-N	-7.51	110.68	122.70
1	A	327	A	P-O3'-C3'	7.45	128.63	119.70
1	A	765	G	O3'-P-O5'	-7.43	89.87	104.00
1	A	819	A	O4'-C1'-N9	-7.43	102.25	108.20
1	A	1190	G	P-O3'-C3'	7.37	128.55	119.70
6	C	18	TRP	CA-C-N	7.35	133.38	117.20
1	A	365	U	P-O3'-C3'	-7.32	110.92	119.70
1	A	569	C	P-O3'-C3'	-7.31	110.93	119.70
1	A	1085	U	O3'-P-O5'	7.29	117.85	104.00
1	A	993	G	P-O3'-C3'	7.28	128.44	119.70
1	A	501	C	O4'-C1'-N1	7.27	114.02	108.20
1	A	569	C	OP2-P-O3'	7.27	121.19	105.20
1	A	1301	U	C1'-O4'-C4'	-7.27	104.09	109.90
1	A	286	G	OP1-P-O3'	7.24	121.14	105.20
1	A	879	C	P-O3'-C3'	-7.24	111.01	119.70
1	A	497	A	P-O3'-C3'	-7.24	111.01	119.70
1	A	869	G	OP1-P-O3'	-7.24	89.27	105.20
1	A	51	A	P-O3'-C3'	7.22	128.36	119.70
1	A	851	G	C4'-C3'-C2'	-7.20	95.40	102.60
1	A	1145	C	P-O3'-C3'	7.16	128.29	119.70
1	A	311	C	P-O3'-C3'	-7.14	111.13	119.70
1	A	5	U	P-O3'-C3'	7.13	128.26	119.70
1	A	108	G	OP1-P-O3'	-7.12	89.54	105.20
1	A	258	G	C1'-O4'-C4'	-7.12	104.21	109.90
1	A	429	U	P-O3'-C3'	7.10	128.22	119.70
1	A	1377	A	OP1-P-O3'	-7.09	89.60	105.20
1	A	143	A	OP2-P-O3'	7.09	120.80	105.20
1	A	1278	U	O3'-P-O5'	-7.07	90.56	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	351	G	P-O3'-C3'	7.05	128.16	119.70
1	A	975	A	P-O3'-C3'	7.05	128.16	119.70
1	A	1522	U	O4'-C1'-N1	7.00	113.80	108.20
1	A	879	C	O3'-P-O5'	6.98	117.27	104.00
1	A	428	G	P-O3'-C3'	6.98	128.08	119.70
1	A	1361	G	P-O3'-C3'	6.97	128.07	119.70
1	A	202	U	P-O3'-C3'	6.97	128.06	119.70
1	A	1498	U	P-O3'-C3'	6.95	128.04	119.70
1	A	1532	U	O4'-C1'-N1	6.93	113.74	108.20
1	A	914	A	C4'-C3'-C2'	-6.91	95.69	102.60
1	A	1504	G	P-O3'-C3'	6.91	127.99	119.70
1	A	770	C	O4'-C1'-N1	6.88	113.70	108.20
1	A	1224	G	C1'-O4'-C4'	-6.88	104.40	109.90
1	A	701	C	C1'-O4'-C4'	-6.87	104.41	109.90
1	A	591	U	O4'-C1'-N1	6.86	113.69	108.20
1	A	891	U	O4'-C1'-N1	6.86	113.69	108.20
1	A	818	G	C1'-O4'-C4'	-6.83	104.44	109.90
1	A	1528	U	P-O3'-C3'	6.81	127.87	119.70
1	A	877	C	C4'-C3'-C2'	-6.79	95.81	102.60
1	A	318	G	O4'-C1'-N9	6.76	113.61	108.20
1	A	1502	A	O4'-C1'-N9	6.74	113.59	108.20
1	A	9	G	O4'-C1'-N9	6.69	113.55	108.20
1	A	974	A	P-O3'-C3'	6.69	127.73	119.70
1	A	578	C	O4'-C1'-N1	6.66	113.53	108.20
1	A	38	G	O3'-P-O5'	-6.60	91.46	104.00
1	A	754	C	P-O3'-C3'	6.58	127.60	119.70
1	A	181	G	P-O3'-C3'	6.58	127.60	119.70
5	B	148	TYR	C-N-CA	-6.57	105.26	121.70
1	A	60	A	OP2-P-O3'	-6.56	90.76	105.20
1	A	356	A	C4'-C3'-C2'	-6.55	96.05	102.60
1	A	286	G	O3'-P-O5'	-6.55	91.56	104.00
1	A	1084	G	P-O3'-C3'	6.52	127.53	119.70
1	A	405	U	P-O3'-C3'	-6.51	111.89	119.70
1	A	506	G	O4'-C1'-N9	6.50	113.40	108.20
1	A	884	U	O4'-C1'-N1	6.49	113.39	108.20
1	A	890	G	C1'-O4'-C4'	-6.47	104.72	109.90
1	A	1400	C	C3'-C2'-C1'	6.46	106.67	101.50
1	A	733	A	O3'-P-O5'	6.44	116.24	104.00
1	A	873	A	P-O3'-C3'	6.44	127.43	119.70
1	A	28	G	C3'-C2'-C1'	-6.41	96.37	101.50
1	A	1398	A	C3'-C2'-C1'	-6.40	96.38	101.50
1	A	501	C	C3'-C2'-C1'	-6.39	96.39	101.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	859	A	O4'-C1'-N9	6.39	113.31	108.20
1	A	1532	U	C3'-C2'-C1'	-6.37	96.41	101.50
1	A	1452	C	C2-N1-C1'	6.36	125.80	118.80
1	A	32	A	C1'-O4'-C4'	-6.31	104.86	109.90
1	A	723	U	C2-N1-C1'	6.30	125.26	117.70
1	A	1481	U	O4'-C1'-N1	6.30	113.24	108.20
1	A	315	A	OP1-P-O3'	6.29	119.04	105.20
1	A	917	G	C4'-C3'-C2'	-6.28	96.32	102.60
1	A	939	G	C1'-O4'-C4'	-6.28	104.88	109.90
1	A	587	G	O3'-P-O5'	-6.28	92.08	104.00
1	A	1453	G	C1'-O4'-C4'	-6.27	104.89	109.90
1	A	30	U	P-O3'-C3'	6.25	127.20	119.70
1	A	543	C	O4'-C1'-N1	6.25	113.20	108.20
1	A	1285	A	P-O3'-C3'	6.25	127.20	119.70
1	A	27	G	P-O3'-C3'	6.24	127.19	119.70
1	A	396	G	C1'-O4'-C4'	-6.24	104.91	109.90
1	A	652	U	O4'-C1'-N1	6.24	113.19	108.20
1	A	353	A	O4'-C1'-N9	6.22	113.18	108.20
1	A	1108	G	C4'-C3'-C2'	-6.21	96.39	102.60
1	A	587	G	OP2-P-O3'	6.20	118.84	105.20
1	A	915	A	C3'-C2'-C1'	-6.20	96.54	101.50
1	A	1300	G	P-O3'-C3'	6.20	127.14	119.70
1	A	1397	C	N1-C2-O2	6.19	122.62	118.90
1	A	573	A	P-O3'-C3'	6.19	127.13	119.70
1	A	908	A	C3'-C2'-C1'	-6.19	96.55	101.50
1	A	290	C	C5-C6-N1	6.19	124.09	121.00
1	A	1004	A	C1'-O4'-C4'	-6.17	104.96	109.90
1	A	250	A	P-O3'-C3'	6.17	127.10	119.70
5	B	112	VAL	CA-C-N	-6.16	103.66	117.20
1	A	634	C	O4'-C1'-N1	6.15	113.12	108.20
1	A	302	G	C8-N9-C4	-6.14	103.94	106.40
1	A	871	U	P-O3'-C3'	6.14	127.07	119.70
1	A	859	A	C1'-O4'-C4'	-6.14	104.99	109.90
1	A	92	C	O4'-C1'-N1	6.13	113.11	108.20
1	A	806	C	O4'-C1'-N1	6.13	113.10	108.20
1	A	108	G	P-O3'-C3'	-6.13	112.35	119.70
1	A	849	C	O4'-C1'-N1	6.13	113.10	108.20
3	W	21	A	O3'-P-O5'	-6.11	92.39	104.00
1	A	372	C	C1'-O4'-C4'	-6.11	105.02	109.90
1	A	820	U	OP2-P-O3'	6.10	118.62	105.20
1	A	344	A	P-O3'-C3'	6.09	127.00	119.70
1	A	569	C	O3'-P-O5'	-6.07	92.47	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1413	A	C3'-C2'-C1'	-6.05	96.66	101.50
1	A	748	C	P-O3'-C3'	6.05	126.96	119.70
1	A	672	U	P-O3'-C3'	-6.05	112.44	119.70
1	A	339	C	O4'-C1'-N1	6.04	113.03	108.20
1	A	917	G	C3'-C2'-C1'	-6.04	96.67	101.50
1	A	870	U	C3'-C2'-C1'	6.01	106.31	101.50
1	A	603	U	C3'-C2'-C1'	-6.01	96.69	101.50
1	A	727	G	O4'-C4'-C3'	-6.00	98.00	104.00
1	A	904	C	O4'-C1'-N1	6.00	113.00	108.20
8	E	12	LEU	CA-CB-CG	6.00	129.09	115.30
1	A	1297	C	P-O3'-C3'	5.98	126.87	119.70
1	A	728	A	O4'-C1'-N9	5.97	112.98	108.20
1	A	1453	G	O4'-C1'-N9	5.96	112.97	108.20
1	A	888	G	C5-C6-O6	-5.95	125.03	128.60
1	A	65	U	C3'-C2'-C1'	5.93	106.25	101.50
1	A	1452	C	N1-C2-O2	5.93	122.46	118.90
3	W	15	G	N9-C1'-C2'	-5.92	105.48	112.00
1	A	1125	U	P-O3'-C3'	5.92	126.81	119.70
1	A	740	U	O4'-C1'-N1	5.91	112.93	108.20
1	A	127	G	C3'-C2'-C1'	-5.89	96.78	101.50
1	A	510	A	O4'-C1'-N9	5.89	112.92	108.20
1	A	296	U	O4'-C1'-N1	5.89	112.91	108.20
1	A	553	A	O4'-C1'-N9	5.88	112.91	108.20
1	A	1094	G	C1'-O4'-C4'	-5.88	105.20	109.90
1	A	882	C	O4'-C1'-N1	5.87	112.89	108.20
2	V	45	G	OP1-P-O3'	-5.87	92.29	105.20
1	A	1255	G	OP2-P-O3'	5.87	118.11	105.20
1	A	367	U	P-O3'-C3'	5.83	126.70	119.70
1	A	607	A	C4'-C3'-C2'	-5.79	96.81	102.60
1	A	18	C	O4'-C1'-N1	5.78	112.83	108.20
1	A	1418	A	P-O3'-C3'	5.78	126.64	119.70
1	A	115	G	OP2-P-O3'	5.78	117.91	105.20
1	A	902	G	P-O3'-C3'	5.76	126.62	119.70
1	A	542	G	C4'-C3'-C2'	-5.75	96.85	102.60
1	A	1193	G	C3'-C2'-C1'	-5.75	96.90	101.50
1	A	524	G	P-O3'-C3'	5.74	126.58	119.70
1	A	738	C	C3'-C2'-C1'	-5.73	96.91	101.50
1	A	413	G	C1'-O4'-C4'	-5.72	105.32	109.90
1	A	801	U	O4'-C1'-N1	5.71	112.77	108.20
1	A	732	C	O4'-C1'-N1	5.70	112.76	108.20
1	A	858	G	O3'-P-O5'	-5.70	93.18	104.00
1	A	1297	C	C3'-C2'-C1'	5.69	106.06	101.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	586	C	O4'-C1'-N1	5.69	112.75	108.20
1	A	976	G	C1'-O4'-C4'	-5.68	105.35	109.90
1	A	776	G	OP1-P-O3'	5.68	117.69	105.20
1	A	1399	C	C1'-O4'-C4'	-5.67	105.37	109.90
17	N	27	CYS	CA-CB-SG	5.66	124.18	114.00
1	A	508	C	P-O3'-C3'	5.64	126.47	119.70
1	A	1380	U	C1'-O4'-C4'	-5.64	105.39	109.90
1	A	522	C	C4'-C3'-C2'	-5.64	96.96	102.60
1	A	1192	C	C3'-C2'-C1'	-5.64	96.99	101.50
1	A	438	G	C3'-C2'-C1'	5.64	106.01	101.50
1	A	359	U	O4'-C1'-N1	5.63	112.71	108.20
1	A	412	A	C1'-O4'-C4'	-5.63	105.40	109.90
1	A	944	G	O3'-P-O5'	-5.63	93.31	104.00
1	A	1301	U	O4'-C1'-N1	5.63	112.70	108.20
1	A	403	C	O4'-C1'-N1	5.62	112.69	108.20
1	A	481	G	C3'-C2'-C1'	5.61	105.99	101.50
1	A	571	U	C2-N1-C1'	5.61	124.43	117.70
1	A	1107	C	OP1-P-O3'	-5.59	92.89	105.20
1	A	1400	C	P-O3'-C3'	5.59	126.41	119.70
1	A	1084	G	C3'-C2'-C1'	5.59	105.97	101.50
1	A	233	C	O4'-C1'-N1	5.59	112.67	108.20
1	A	290	C	C3'-C2'-C1'	-5.59	97.03	101.50
1	A	365	U	O3'-P-O5'	-5.58	93.39	104.00
1	A	1397	C	C2-N1-C1'	5.58	124.94	118.80
1	A	1451	A	C3'-C2'-C1'	-5.58	97.04	101.50
1	A	616	G	C3'-C2'-C1'	-5.58	97.04	101.50
1	A	1117	G	O3'-P-O5'	5.58	114.59	104.00
1	A	1064	G	O4'-C1'-N9	5.57	112.65	108.20
1	A	893	C	O4'-C1'-N1	5.56	112.65	108.20
1	A	234	C	C3'-C2'-C1'	-5.55	97.06	101.50
1	A	498	U	C3'-C2'-C1'	5.55	105.94	101.50
1	A	709	G	O4'-C1'-N9	5.54	112.64	108.20
1	A	485	G	C1'-O4'-C4'	-5.54	105.47	109.90
1	A	342	C	O4'-C1'-N1	5.53	112.63	108.20
1	A	827	U	O3'-P-O5'	5.53	114.52	104.00
2	V	7	U	OP2-P-O3'	-5.53	93.03	105.20
23	T	84	LEU	CA-CB-CG	5.53	128.02	115.30
1	A	615	C	O4'-C1'-N1	5.52	112.62	108.20
1	A	499	A	C1'-O4'-C4'	-5.52	105.48	109.90
1	A	1256	A	C3'-C2'-C1'	5.51	105.91	101.50
1	A	1510	U	C3'-C2'-C1'	-5.50	97.10	101.50
1	A	1345	U	O3'-P-O5'	-5.50	93.55	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	276	G	C3'-C2'-C1'	-5.50	97.10	101.50
1	A	496	A	P-O3'-C3'	5.50	126.29	119.70
1	A	587	G	P-O3'-C3'	-5.49	113.11	119.70
1	A	356	A	O4'-C1'-N9	5.48	112.59	108.20
1	A	836	G	C4'-C3'-C2'	-5.48	97.12	102.60
1	A	656	C	C3'-C2'-C1'	-5.47	97.12	101.50
1	A	652	U	C1'-O4'-C4'	-5.46	105.53	109.90
1	A	231	G	C5'-C4'-O4'	5.46	115.65	109.10
1	A	242	C	O4'-C1'-N1	5.45	112.56	108.20
1	A	48	C	P-O3'-C3'	5.45	126.24	119.70
1	A	28	G	C4'-C3'-C2'	-5.45	97.15	102.60
1	A	969	A	O4'-C1'-N9	5.45	112.56	108.20
1	A	1107	C	O3'-P-O5'	5.44	114.34	104.00
1	A	913	A	OP1-P-O3'	5.43	117.16	105.20
1	A	542	G	O4'-C1'-N9	5.43	112.54	108.20
3	W	46	G	C5-N7-C8	5.43	107.01	104.30
5	B	148	TYR	CA-C-N	-5.42	105.27	117.20
1	A	951	G	C4'-C3'-C2'	-5.42	97.19	102.60
1	A	125	U	O4'-C1'-N1	5.41	112.53	108.20
1	A	1255	G	OP1-P-O3'	-5.41	93.31	105.20
1	A	591	U	C3'-C2'-C1'	-5.40	97.18	101.50
1	A	1530	G	C1'-O4'-C4'	-5.40	105.58	109.90
1	A	1065	U	C2'-C3'-O3'	5.38	122.31	113.70
1	A	387	U	C1'-O4'-C4'	-5.38	105.60	109.90
1	A	332	G	C3'-C2'-C1'	-5.37	97.20	101.50
1	A	1532	U	O4'-C4'-C3'	-5.37	98.63	104.00
1	A	595	G	C3'-C2'-C1'	5.37	105.79	101.50
1	A	1212	U	P-O3'-C3'	5.36	126.13	119.70
1	A	1345	U	OP2-P-O3'	5.36	117.00	105.20
1	A	403	C	C3'-C2'-C1'	-5.35	97.22	101.50
1	A	402	G	C3'-C2'-C1'	-5.34	97.23	101.50
1	A	792	A	O4'-C1'-N9	5.34	112.47	108.20
1	A	1331	G	P-O3'-C3'	5.34	126.10	119.70
1	A	679	C	O4'-C1'-N1	5.33	112.46	108.20
1	A	332	G	C4'-C3'-C2'	-5.32	97.28	102.60
1	A	680	C	O4'-C1'-N1	5.32	112.45	108.20
1	A	576	G	C1'-O4'-C4'	-5.30	105.66	109.90
1	A	1285	A	C1'-O4'-C4'	-5.30	105.66	109.90
1	A	792	A	C1'-O4'-C4'	-5.29	105.67	109.90
1	A	258	G	O4'-C1'-N9	5.28	112.43	108.20
1	A	574	A	C8-N9-C4	-5.28	103.69	105.80
1	A	904	C	C3'-C2'-C1'	-5.28	97.28	101.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	883	C	O4'-C1'-N1	5.27	112.42	108.20
1	A	1452	C	N1-C1'-C2'	5.26	120.84	114.00
1	A	366	C	C3'-C2'-C1'	5.23	105.69	101.50
1	A	574	A	N7-C8-N9	5.23	116.41	113.80
1	A	1302	U	P-O3'-C3'	5.22	125.97	119.70
10	G	12	LEU	CA-C-N	5.22	128.68	117.20
1	A	511	C	C3'-C2'-C1'	5.22	105.67	101.50
1	A	974	A	OP1-P-O3'	-5.22	93.72	105.20
1	A	137	C	O4'-C1'-N1	5.21	112.37	108.20
1	A	1158	C	N1-C2-O2	5.21	122.03	118.90
1	A	541	G	C8-N9-C4	-5.21	104.32	106.40
1	A	74	C	O4'-C1'-N1	5.20	112.36	108.20
1	A	147	G	C3'-C2'-C1'	-5.20	97.34	101.50
1	A	702	A	C3'-C2'-C1'	5.20	105.66	101.50
1	A	38	G	OP2-P-O3'	-5.20	93.77	105.20
7	D	31	CYS	CA-CB-SG	5.19	123.34	114.00
1	A	204	U	C2-N1-C1'	5.19	123.93	117.70
1	A	918	A	O4'-C1'-N9	5.18	112.34	108.20
1	A	1315	U	O4'-C1'-N1	5.17	112.34	108.20
1	A	1362	C	O4'-C1'-N1	5.17	112.34	108.20
1	A	1365	G	N9-C1'-C2'	-5.17	106.32	112.00
1	A	1201	A	C1'-O4'-C4'	-5.17	105.77	109.90
1	A	1078	U	O4'-C1'-N1	5.16	112.33	108.20
1	A	819	A	P-O3'-C3'	5.15	125.88	119.70
1	A	859	A	C4'-C3'-C2'	-5.15	97.45	102.60
1	A	814	A	P-O3'-C3'	5.15	125.88	119.70
1	A	345	C	P-O3'-C3'	5.15	125.88	119.70
1	A	908	A	O4'-C1'-N9	5.15	112.32	108.20
1	A	21	G	C3'-C2'-C1'	-5.14	97.39	101.50
1	A	135	C	O4'-C1'-N1	5.14	112.31	108.20
1	A	827	U	O4'-C1'-N1	5.14	112.31	108.20
1	A	65	U	P-O3'-C3'	5.13	125.86	119.70
1	A	421	U	C3'-C2'-C1'	5.13	105.61	101.50
1	A	1378	C	N1-C2-O2	5.13	121.98	118.90
1	A	10	A	C4'-C3'-C2'	-5.12	97.48	102.60
1	A	1346	A	C1'-O4'-C4'	-5.12	105.81	109.90
1	A	44	G	C3'-C2'-C1'	-5.11	97.42	101.50
1	A	1304	G	C1'-O4'-C4'	-5.10	105.82	109.90
1	A	849	C	C4'-C3'-C2'	-5.09	97.51	102.60
1	A	509	A	C3'-C2'-C1'	-5.09	97.43	101.50
1	A	314	C	P-O3'-C3'	5.08	125.79	119.70
1	A	434	U	O4'-C1'-N1	5.08	112.26	108.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1498	U	C3'-C2'-C1'	5.07	105.56	101.50
1	A	1158	C	C2-N1-C1'	5.07	124.38	118.80
1	A	918	A	C3'-C2'-C1'	5.07	105.55	101.50
1	A	1485	U	O4'-C4'-C3'	-5.06	98.94	104.00
1	A	1533	C	O4'-C1'-N1	5.06	112.25	108.20
1	A	508	C	C3'-C2'-C1'	5.05	105.54	101.50
1	A	615	C	C3'-C2'-C1'	-5.05	97.46	101.50
1	A	960	U	C2-N1-C1'	5.05	123.76	117.70
1	A	1339	A	C3'-C2'-C1'	-5.04	97.47	101.50
19	P	6	LEU	CA-CB-CG	5.04	126.89	115.30
1	A	972	C	O4'-C1'-N1	5.04	112.23	108.20
1	A	412	A	O4'-C1'-N9	5.04	112.23	108.20
1	A	1514	C	C5-C6-N1	5.04	123.52	121.00
1	A	1020	U	O4'-C1'-N1	5.03	112.23	108.20
1	A	271	C	O4'-C1'-N1	5.03	112.22	108.20
1	A	949	A	C1'-O4'-C4'	-5.03	105.88	109.90
1	A	1540	U	O4'-C1'-N1	5.02	112.22	108.20
1	A	38	G	C4'-C3'-C2'	-5.02	97.58	102.60
1	A	911	U	O4'-C1'-N1	5.01	112.21	108.20
6	C	91	LEU	CA-CB-CG	5.01	126.83	115.30
1	A	302	G	N7-C8-N9	5.01	115.61	113.10
1	A	662	G	C1'-O4'-C4'	-5.01	105.89	109.90
1	A	1394	A	C3'-C2'-C1'	5.01	105.51	101.50
1	A	289	G	O4'-C1'-N9	5.01	112.21	108.20
1	A	308	C	C4'-C3'-C2'	-5.01	97.59	102.60
1	A	329	A	P-O3'-C3'	5.01	125.71	119.70

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
3	W	37	YYG	C15

All (13) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
5	B	148	TYR	Mainchain
6	C	106	VAL	Mainchain
6	C	18	TRP	Mainchain
7	D	49	ARG	Mainchain
15	L	23	LYS	Mainchain
16	M	66	LEU	Mainchain
20	Q	22	LEU	Mainchain

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Mol	Chain	Res	Type	Group
20	Q	40	LYS	Mainchain
3	W	16	U	Sidechain
3	W	17	U	Sidechain
3	W	18	G	Sidechain
3	W	19	G	Sidechain
3	W	62	A	Sidechain

## 5.2 Close contacts

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogens added by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, and the number in parentheses is this value normalized per 1000 atoms of the molecule in the chain. The Symm-Clashes column gives symmetry related clashes, in the same way as for the Clashes column.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	32551	0	16464	1900	0
2	V	1622	0	823	144	0
3	W	1638	0	837	184	0
4	X	136	0	63	35	0
5	B	1900	0	1950	97	0
6	C	1612	0	1675	104	0
7	D	1703	0	1762	190	0
8	E	1146	0	1206	57	0
9	F	843	0	857	27	0
10	G	1257	0	1294	138	0
11	H	1116	0	1177	79	0
12	I	1011	0	1041	80	0
13	J	794	0	840	118	0
14	K	885	0	904	50	0
15	L	970	0	1056	79	0
16	M	997	0	1071	123	0
17	N	492	0	529	111	0
18	O	734	0	771	31	0
19	P	700	0	720	68	0
20	Q	857	0	929	96	0
21	R	597	0	668	31	0
22	S	647	0	672	146	0
23	T	762	0	859	43	0
24	U	208	0	221	22	0
25	Y	333	0	0	23	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
All	All	55511	0	38389	3075	0

Clashscore is defined as the number of clashes calculated for the entry per 1000 atoms (including hydrogens) of the entry. The overall clashscore for this entry is 33.

All (3075) close contacts within the same asymmetric unit are listed below.

Atom-1	Atom-2	Distance(Å)	Clash(Å)
2:V:35:A:H2	4:X:118:C:C2	1.06	1.64
4:X:120:A:C2	25:Y:193:HIS:CA	1.75	1.64
3:W:25:C:H3'	3:W:26:G:C8	1.21	1.61
2:V:35:A:C2	4:X:118:C:C2	1.88	1.59
16:M:91:ARG:HH12	16:M:103:THR:CG2	1.10	1.59
3:W:25:C:C3'	3:W:26:G:H8	1.17	1.57
1:A:1224:G:N2	1:A:1362:C:C2	1.69	1.48
4:X:121:G:N2	25:Y:191:ARG:CA	1.76	1.48
1:A:1313:U:H5	22:S:4:SER:CB	1.00	1.47
1:A:1319:A:H4'	22:S:70:LYS:NZ	1.26	1.44
4:X:121:G:C2	25:Y:191:ARG:CA	2.01	1.44
16:M:92:HIS:CD2	16:M:98:VAL:HG21	1.54	1.41
1:A:1320:C:N4	22:S:36:ARG:HG3	1.29	1.40
10:G:12:LEU:C	10:G:13:GLN:N	1.75	1.40
2:V:35:A:C2	4:X:118:C:N3	1.90	1.39
4:X:121:G:N1	25:Y:191:ARG:CA	1.86	1.38
3:W:25:C:C3'	3:W:26:G:C8	1.91	1.37
1:A:1313:U:C5	22:S:4:SER:CB	1.74	1.37
1:A:1030:C:H2'	1:A:30(A):G:C8	1.57	1.36
3:W:1:G:N2	3:W:2:C:H41	1.22	1.35
16:M:94:ARG:N	16:M:95:GLY:N	1.72	1.35
1:A:1211:U:O3'	1:A:1212:U:P	0.97	1.34
2:V:35:A:H2	4:X:118:C:O2	1.04	1.33
17:N:24:CYS:CB	17:N:40:CYS:H	1.40	1.33
1:A:958:A:C2	22:S:55:LYS:HB2	1.62	1.33
16:M:91:ARG:NH1	16:M:103:THR:CG2	1.85	1.32
3:W:37:YYG:C21	10:G:83:ALA:CB	2.08	1.31
1:A:1317:C:O2'	22:S:10:PHE:CZ	1.79	1.30
3:W:1:G:N2	3:W:2:C:N4	1.77	1.29
16:M:91:ARG:NH1	16:M:103:THR:HG21	1.38	1.29
1:A:1288:A:N1	1:A:1371:G:H1'	1.47	1.29
5:B:112:VAL:C	5:B:113:HIS:N	1.85	1.28
4:X:120:A:N1	25:Y:193:HIS:CA	1.97	1.28
3:W:25:C:C5	3:W:26:G:C5	2.22	1.27
1:A:1221:G:H5'	22:S:36:ARG:NH1	1.43	1.27

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:1211:U:HO3'	1:A:1212:U:P	0.79	1.27
3:W:25:C:N4	3:W:26:G:N1	1.79	1.27
1:A:953:G:O2'	16:M:125:ARG:HA	1.22	1.27
1:A:1219:U:O2'	22:S:34:TRP:HB3	1.23	1.27
2:V:65:G:C3'	2:V:66:A:P	2.20	1.27
1:A:1319:A:C4'	22:S:70:LYS:HZ3	1.45	1.26
3:W:37:YYG:C10	10:G:83:ALA:HB1	1.66	1.26
4:X:121:G:H22	25:Y:191:ARG:CA	1.38	1.26
16:M:91:ARG:CZ	16:M:103:THR:HG21	1.64	1.26
1:A:1224:G:N2	1:A:1362:C:O2	1.56	1.25
1:A:975:A:C8	1:A:1357:A:H2	1.54	1.24
3:W:72:C:O2'	3:W:73:A:C5'	1.85	1.23
2:V:65:G:O3'	2:V:66:A:P	0.85	1.23
3:W:39:PSU:H4'	14:K:54:ARG:NH2	1.54	1.22
1:A:986:A:N3	22:S:52:TYR:OH	1.69	1.22
3:W:25:C:C2	3:W:26:G:C4	2.27	1.22
2:V:7:U:O3'	2:V:8:U:P	1.98	1.22
1:A:1318:A:O2'	22:S:37:ARG:HB3	1.36	1.21
1:A:703:G:O3'	1:A:704:A:P	1.99	1.21
1:A:1320:C:C2	22:S:72:GLY:HA3	1.75	1.21
2:V:65:G:HO3'	2:V:66:A:P	0.71	1.20
1:A:1311:G:O6	22:S:2:PRO:HA	1.38	1.20
2:V:35:A:N1	4:X:118:C:N3	1.88	1.20
16:M:94:ARG:C	16:M:95:GLY:N	1.93	1.20
3:W:25:C:C4	3:W:26:G:C6	2.30	1.19
1:A:1361:G:O3'	1:A:361(A):C:P	1.99	1.19
1:A:299:G:N2	1:A:566:G:O6	1.75	1.19
1:A:576:G:O3'	1:A:577:G:P	2.01	1.19
1:A:1004:A:H5''	1:A:1025:U:C4	1.76	1.19
3:W:25:C:N3	3:W:26:G:N3	1.91	1.18
3:W:72:C:O2'	3:W:73:A:H5'	1.38	1.18
1:A:1222:G:OP2	1:A:1322:C:C5	1.96	1.18
3:W:25:C:C4	3:W:26:G:C2	2.31	1.18
1:A:876:G:H1'	11:H:11:THR:HG21	1.26	1.18
1:A:247:G:OP2	20:Q:99:SER:HB2	1.39	1.17
6:C:9:GLY:CA	17:N:49:HIS:O	1.91	1.17
1:A:1211:U:C3'	1:A:1212:U:P	2.32	1.17
3:W:37:YYG:H191	10:G:79:ARG:HA	1.22	1.16
1:A:1315:U:OP2	22:S:6:LYS:NZ	1.78	1.16
1:A:988:G:H4'	1:A:1014:A:H61	1.07	1.15
3:W:25:C:C4	3:W:26:G:N1	2.14	1.15
3:W:25:C:N3	3:W:26:G:C2	2.14	1.15

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:937:A:O3'	1:A:938:A:P	2.04	1.15
3:W:72:C:O2'	3:W:73:A:C4'	1.95	1.15
1:A:587:G:O3'	1:A:588:G:P	2.04	1.15
13:J:51:ARG:HB2	13:J:59:SER:HB3	1.16	1.14
1:A:1319:A:O3'	22:S:70:LYS:NZ	1.79	1.14
4:X:121:G:H1	25:Y:191:ARG:CA	1.47	1.14
3:W:25:C:C5	3:W:26:G:C6	2.34	1.14
13:J:45:ARG:NH2	17:N:36:PHE:HE2	1.42	1.14
7:D:15:GLU:HG2	7:D:63:LYS:HB3	1.27	1.14
3:W:37:YYG:N20	10:G:83:ALA:HB1	1.51	1.13
1:A:65:U:C6	1:A:200:G:H4'	1.83	1.13
1:A:958:A:C4	22:S:55:LYS:HD2	1.83	1.13
13:J:46:ARG:NH1	17:N:59:ALA:HB1	1.62	1.13
16:M:91:ARG:NH2	16:M:103:THR:HG21	1.64	1.12
1:A:1319:A:C4'	22:S:70:LYS:NZ	2.04	1.13
1:A:1098:C:H4'	1:A:1167:A:H2	1.12	1.12
1:A:405:U:O3'	1:A:406:G:P	2.07	1.12
16:M:91:ARG:HH12	16:M:103:THR:HG22	0.97	1.12
16:M:94:ARG:CA	16:M:95:GLY:N	2.12	1.12
3:W:37:YYG:O23	10:G:83:ALA:HB3	0.96	1.12
1:A:733:A:O3'	1:A:734:G:P	2.08	1.12
1:A:986:A:H1'	22:S:55:LYS:HA	1.25	1.12
3:W:37:YYG:H101	10:G:83:ALA:HB1	1.23	1.12
1:A:436:C:H2'	1:A:437:U:C6	1.84	1.12
1:A:1340:A:O2'	2:V:31:A:O2'	1.67	1.12
1:A:975:A:C8	1:A:1357:A:C2	2.37	1.11
1:A:1313:U:C5	22:S:4:SER:HB2	1.39	1.11
17:N:24:CYS:HB2	17:N:40:CYS:H	1.00	1.11
1:A:1005:A:H4'	1:A:1037:C:H1'	1.32	1.11
1:A:1222:G:OP1	1:A:1321:C:H2'	1.49	1.11
1:A:1502:A:H2	1:A:1505:G:N1	1.48	1.11
1:A:1222:G:OP2	1:A:1322:C:C4	2.04	1.10
1:A:1097:C:O2'	1:A:1168:A:N3	1.83	1.10
16:M:94:ARG:C	16:M:95:GLY:CA	2.20	1.10
1:A:1156:G:H1'	1:A:1179:A:H61	0.93	1.10
1:A:1500:A:H5''	1:A:1508:G:H5''	1.17	1.09
1:A:1098:C:H4'	1:A:1167:A:C2	1.87	1.09
13:J:46:ARG:HH11	17:N:59:ALA:HB1	0.97	1.09
8:E:78:HIS:HB2	11:H:104:ARG:HD2	1.35	1.09
1:A:1347:G:H8	12:I:107:ARG:HB3	1.17	1.09
7:D:9:CYS:SG	7:D:31:CYS:HA	1.91	1.09
1:A:196:A:O3'	1:A:197:A:P	2.11	1.09

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:1098:C:C4'	1:A:1167:A:H2	1.65	1.09
1:A:60:A:N6	1:A:107:G:O2'	1.84	1.09
1:A:39:G:N7	1:A:547:A:H8	1.49	1.09
2:V:34:G:H2'	2:V:35:A:H5''	1.31	1.09
3:W:45:G:O3'	3:W:46:G:H5'	1.53	1.09
1:A:1320:C:N3	22:S:72:GLY:HA3	1.68	1.08
1:A:1319:A:C3'	22:S:70:LYS:HZ1	1.67	1.08
3:W:37:YYG:H102	10:G:83:ALA:CB	1.83	1.08
16:M:66:LEU:HA	16:M:70:LEU:HD12	1.20	1.08
1:A:1248:A:N3	12:I:70:LYS:NZ	1.99	1.08
1:A:115:G:O3'	1:A:116:A:P	2.12	1.08
1:A:1004:A:H2'	1:A:1036:G:O6	1.54	1.08
3:W:40:C:O3'	10:G:147:ALA:HB1	1.50	1.08
5:B:185:ILE:HG22	5:B:199:TYR:HB2	1.34	1.08
1:A:939:G:H5''	10:G:102:ARG:NH2	1.67	1.07
3:W:25:C:C2'	3:W:26:G:C8	2.29	1.07
1:A:1211:U:O3'	1:A:1212:U:OP1	1.68	1.07
1:A:1005:A:H5'	1:A:1037:C:H1'	1.36	1.07
1:A:977:A:N6	1:A:1224:G:O5'	1.88	1.06
1:A:815:A:O2'	1:A:1527:C:H1'	1.55	1.06
1:A:1222:G:OP1	1:A:1321:C:C2'	2.04	1.06
1:A:1156:G:H1'	1:A:1179:A:N6	1.70	1.06
1:A:976:G:H2'	1:A:361(A):C:N4	1.69	1.06
1:A:1320:C:C1'	22:S:73:GLU:HG2	1.86	1.06
1:A:1405:G:N2	1:A:1518:A:N3	2.03	1.06
1:A:409:G:H5''	7:D:25:ARG:HB2	1.06	1.06
1:A:37:U:N3	1:A:397:A:N1	2.01	1.06
1:A:1320:C:N4	22:S:36:ARG:CG	2.18	1.05
1:A:764:C:H2'	1:A:765:G:C8	1.91	1.05
1:A:926:G:H22	4:X:116:U:P	1.79	1.05
1:A:1030:C:H2'	1:A:30(A):G:N7	1.71	1.05
20:Q:22:LEU:HD12	20:Q:23:VAL:O	1.56	1.05
1:A:983:A:O3'	1:A:984:C:P	2.15	1.05
3:W:37:YYG:C10	10:G:83:ALA:CB	2.33	1.05
1:A:1318:A:H5'	22:S:10:PHE:CB	1.87	1.04
1:A:926:G:N2	4:X:116:U:P	2.30	1.04
2:V:40:C:H2'	2:V:41:U:H5''	1.36	1.04
9:F:95:GLU:HB2	9:F:96:PRO:CD	1.88	1.04
1:A:975:A:C4	1:A:1357:A:C2	2.46	1.04
1:A:1308:U:C5'	16:M:110:ARG:HH22	1.70	1.04
1:A:1198:G:O2'	13:J:54:PHE:HE2	1.41	1.04
1:A:65:U:O2	1:A:199:G:N2	1.90	1.03

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:764:C:H2'	1:A:765:G:H8	1.20	1.03
3:W:72:C:O2'	3:W:73:A:O4'	1.74	1.03
1:A:901:A:O2'	1:A:1513:A:OP1	1.72	1.03
1:A:1308:U:H5'	16:M:110:ARG:HH22	1.21	1.03
1:A:944:G:C6	1:A:1337:G:H2'	1.93	1.03
1:A:977:A:N6	1:A:1224:G:P	2.31	1.02
13:J:45:ARG:NH2	17:N:36:PHE:CE2	2.27	1.02
7:D:99:SER:HB3	7:D:139:ARG:HG3	1.39	1.02
1:A:1313:U:C5	22:S:4:SER:HB3	1.63	1.02
3:W:39:PSU:H4'	14:K:54:ARG:HH22	1.13	1.02
1:A:979:C:H5''	1:A:1222:G:O6	1.60	1.02
17:N:24:CYS:HB2	17:N:40:CYS:N	1.75	1.01
1:A:1005:A:C5'	1:A:1037:C:H1'	1.88	1.01
3:W:25:C:C4	3:W:26:G:C5	2.47	1.01
1:A:247:G:OP2	20:Q:99:SER:CB	2.07	1.01
7:D:21:LEU:O	7:D:113:SER:HB2	1.60	1.01
2:V:35:A:C2	4:X:118:C:O2	1.88	1.00
3:W:25:C:C6	3:W:26:G:C5	2.49	1.00
1:A:1318:A:H5'	22:S:10:PHE:CG	1.96	1.00
16:M:23:TYR:HE2	16:M:70:LEU:HD22	1.24	1.00
1:A:585:G:O2'	1:A:879:C:H5''	1.61	1.00
5:B:145:LEU:O	5:B:149:LEU:HB2	1.61	1.00
8:E:144:THR:C	8:E:145:LYS:N	2.14	1.00
1:A:975:A:N9	1:A:1357:A:C2	2.30	1.00
1:A:409:G:C5'	7:D:25:ARG:HB2	1.91	1.00
1:A:1400:C:C2	2:V:34:G:N2	2.28	1.00
1:A:1227:A:OP1	22:S:80:TYR:CZ	2.14	1.00
1:A:695:A:H2	1:A:787:A:H4'	1.22	1.00
1:A:60:A:O3'	1:A:61:G:P	2.20	1.00
1:A:1313:U:H5	22:S:4:SER:HB3	0.86	0.99
1:A:939:G:P	10:G:102:ARG:HH12	1.84	0.99
6:C:48:TYR:OH	6:C:122:GLU:OE1	1.80	0.99
1:A:1320:C:O2	22:S:72:GLY:C	1.99	0.99
1:A:889:A:N6	1:A:908:A:N7	2.11	0.99
1:A:761:G:O2'	20:Q:104:LYS:HA	1.60	0.99
1:A:671:G:H5'	9:F:77:ARG:HH21	1.26	0.99
16:M:87:TYR:HB2	22:S:73:GLU:O	1.62	0.99
1:A:1005:A:C4'	1:A:1037:C:H1'	1.93	0.99
1:A:1227:A:OP1	22:S:80:TYR:OH	1.79	0.98
1:A:1030:C:C4	1:A:30(A):G:O6	2.16	0.98
6:C:9:GLY:HA2	17:N:49:HIS:O	1.62	0.98
1:A:60:A:C2	1:A:107:G:N3	2.31	0.98

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:958:A:N9	22:S:55:LYS:HD2	1.76	0.98
1:A:376:G:H5''	19:P:5:ARG:HD2	1.45	0.98
1:A:254:G:O2'	20:Q:16:GLN:O	1.81	0.98
1:A:926:G:N2	4:X:116:U:OP2	1.96	0.98
2:V:34:G:C2'	2:V:35:A:H5''	1.93	0.98
1:A:815:A:H2	1:A:1528:U:H1'	1.29	0.98
9:F:95:GLU:HB2	9:F:96:PRO:HD3	1.42	0.98
3:W:25:C:N3	3:W:26:G:C4	2.30	0.97
1:A:1117:G:N2	1:A:1180:A:H1'	1.77	0.97
1:A:39:G:N7	1:A:547:A:C8	2.31	0.97
13:J:10:GLY:HA3	13:J:16:LEU:HD21	1.45	0.97
1:A:953:G:O2'	16:M:124:PRO:O	1.80	0.97
2:V:35:A:N6	4:X:117:U:O4	1.97	0.97
1:A:436:C:H2'	1:A:437:U:N1	1.80	0.97
1:A:1340:A:C2'	2:V:31:A:O2'	2.11	0.97
1:A:1225:A:H4'	22:S:78:ARG:HD3	1.44	0.97
1:A:1156:G:C1'	1:A:1179:A:H61	1.77	0.97
3:W:25:C:C2	3:W:26:G:N3	2.31	0.96
17:N:24:CYS:CB	17:N:40:CYS:N	2.26	0.96
3:W:25:C:C4	3:W:26:G:C4	2.54	0.96
6:C:91:LEU:HD11	6:C:99:VAL:HG22	1.45	0.96
1:A:1286:A:N6	1:A:1354:C:H5''	1.79	0.96
1:A:1314:C:N4	22:S:4:SER:O	1.98	0.96
1:A:652:U:H1'	1:A:653:A:H2	1.30	0.96
1:A:1061:G:OP1	13:J:59:SER:HA	1.66	0.96
1:A:1311:G:C6	22:S:2:PRO:HA	2.01	0.96
1:A:377:G:OP1	19:P:3:LYS:HD2	1.65	0.96
2:V:65:G:C3'	2:V:66:A:OP2	2.11	0.96
1:A:1182:G:O2'	1:A:1183:A:OP2	1.71	0.95
3:W:1:G:H22	3:W:2:C:N4	1.65	0.95
16:M:122:LYS:HD2	25:Y:153:GLY:CA	1.97	0.95
1:A:1320:C:C2	22:S:72:GLY:CA	2.49	0.95
1:A:1237:C:O3'	1:A:1238:A:P	2.25	0.95
1:A:1319:A:C3'	22:S:70:LYS:NZ	2.28	0.94
1:A:576:G:N7	1:A:881:G:H1'	1.82	0.94
11:H:21:LYS:O	11:H:63:LEU:HD11	1.67	0.94
3:W:25:C:N4	3:W:26:G:C2	2.33	0.94
1:A:1289:A:H2	1:A:1372:U:H4'	1.30	0.94
1:A:953:G:O2'	16:M:125:ARG:CA	2.14	0.94
13:J:45:ARG:HH21	17:N:36:PHE:HE2	1.14	0.94
13:J:64:GLU:HB3	17:N:59:ALA:HB2	1.49	0.94
1:A:889:A:H4'	1:A:890:G:H4'	1.44	0.93

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:1222:G:OP2	1:A:1322:C:N4	2.00	0.93
1:A:952:U:O2	16:M:126:LYS:O	1.85	0.93
1:A:1320:C:O4'	22:S:73:GLU:HG2	1.68	0.93
2:V:9:A:C2	2:V:45:G:C4	2.56	0.93
3:W:25:C:O2	3:W:26:G:H1'	1.68	0.93
1:A:1221:G:H5'	22:S:36:ARG:HH11	1.23	0.93
1:A:953:G:H1'	16:M:125:ARG:C	1.88	0.92
3:W:37:YYG:C21	10:G:83:ALA:HB1	1.86	0.92
1:A:1030:C:H2'	1:A:30(A):G:H8	1.30	0.92
1:A:1317:C:O2'	22:S:10:PHE:CE2	2.09	0.92
1:A:1225:A:C4'	22:S:78:ARG:HD3	1.98	0.92
1:A:1288:A:N6	1:A:1371:G:O2'	2.02	0.92
1:A:1320:C:H42	22:S:36:ARG:HG3	1.13	0.92
1:A:1221:G:C5'	22:S:36:ARG:NH1	2.32	0.92
3:W:37:YYG:H191	10:G:79:ARG:CA	1.99	0.92
16:M:91:ARG:HD2	16:M:97:PRO:O	1.69	0.92
1:A:409:G:H5''	7:D:25:ARG:CB	1.99	0.92
3:W:37:YYG:C24	10:G:83:ALA:HB3	1.99	0.91
1:A:975:A:C5	1:A:1357:A:H2	1.87	0.91
1:A:277:C:OP1	20:Q:41:LYS:HD2	1.67	0.91
2:V:35:A:N1	4:X:118:C:C4	2.37	0.91
1:A:977:A:N6	1:A:1224:G:OP1	2.03	0.91
1:A:1340:A:C1'	2:V:31:A:O2'	2.18	0.91
1:A:261:U:H5	23:T:79:ARG:NH2	1.68	0.91
1:A:1287:A:H61	1:A:1371:G:C4'	1.84	0.91
1:A:21:G:N2	1:A:914:A:N7	2.19	0.91
1:A:1314:C:H3'	22:S:6:LYS:HD3	1.50	0.91
3:W:39:PSU:C4'	14:K:54:ARG:HH22	1.84	0.91
1:A:405:U:O4	7:D:2:GLY:N	2.04	0.91
1:A:31:G:O2'	1:A:46:G:H5'	1.71	0.91
1:A:1211:U:C3'	1:A:1212:U:OP1	2.17	0.91
1:A:1030:C:C2'	1:A:30(A):G:C8	2.52	0.91
1:A:826:C:H5'	11:H:12:ARG:HE	1.32	0.91
7:D:23:GLY:CA	7:D:113:SER:HB3	2.00	0.91
1:A:1320:C:H1'	22:S:73:GLU:HG2	1.51	0.90
4:X:120:A:H2'	4:X:121:G:C8	2.05	0.90
1:A:1320:C:O2	22:S:72:GLY:O	1.90	0.90
1:A:408:A:H5''	7:D:22:LYS:O	1.70	0.90
1:A:196:A:HO3'	1:A:197:A:P	1.91	0.90
1:A:65:U:H4'	1:A:199:G:O2'	1.71	0.90
1:A:975:A:C4	1:A:1357:A:N3	2.39	0.90
1:A:3(A):G:N1	1:A:1037:C:O2	2.04	0.90

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:976:G:H2'	1:A:361(A):C:H42	1.32	0.90
16:M:91:ARG:HH22	16:M:103:THR:HG21	1.34	0.90
1:A:1236:A:H4'	1:A:1304:G:H4'	1.53	0.90
1:A:876:G:C1'	11:H:11:THR:HG21	2.00	0.90
13:J:64:GLU:HG2	17:N:59:ALA:HA	1.53	0.90
3:W:41:U:H5'	3:W:41:U:H6	1.34	0.90
1:A:1500:A:H5''	1:A:1508:G:C5'	2.02	0.90
1:A:1005:A:H4'	1:A:1037:C:C1'	2.01	0.90
1:A:1340:A:C4'	2:V:31:A:O2'	2.19	0.90
13:J:11:PHE:CE2	17:N:55:GLY:HA3	2.07	0.90
1:A:279:A:N7	20:Q:95:TYR:CE2	2.40	0.90
1:A:22:G:O2'	1:A:913:A:N1	2.05	0.90
3:W:45:G:HO3'	3:W:46:G:C5'	1.85	0.89
1:A:463:A:OP2	19:P:75:ARG:NH2	2.05	0.89
1:A:41:G:H2'	1:A:42:G:C8	2.05	0.89
3:W:33:U:C2	3:W:35:A:H5'	2.06	0.89
1:A:677:U:H3	1:A:713:G:H1	1.18	0.89
1:A:1221:G:H5'	22:S:36:ARG:HH12	1.33	0.89
1:A:3(A):G:O6	1:A:1037:C:N3	2.06	0.89
3:W:41:U:H4'	10:G:143:ARG:HB3	1.55	0.89
3:W:37:YYG:H102	10:G:83:ALA:HB2	1.54	0.89
1:A:25:C:H4'	1:A:524:G:H21	1.36	0.89
16:M:97:PRO:HG2	16:M:103:THR:HG22	1.52	0.89
1:A:1319:A:H4'	22:S:70:LYS:CE	2.03	0.89
6:C:16:ARG:HH22	6:C:184:TYR:H	1.17	0.88
1:A:975:A:C5	1:A:1357:A:C2	2.61	0.88
1:A:1347:G:C8	12:I:107:ARG:HB3	2.07	0.88
1:A:1318:A:H4'	22:S:10:PHE:HD2	1.37	0.88
13:J:63:PHE:HE2	17:N:49:HIS:CE1	1.91	0.88
1:A:986:A:O2'	22:S:55:LYS:O	1.90	0.88
1:A:1311:G:O6	22:S:2:PRO:CA	2.20	0.88
1:A:236:G:H5''	20:Q:42:TYR:OH	1.74	0.88
2:V:7:U:O4	2:V:49:C:N4	2.07	0.88
1:A:46:G:O3'	1:A:47:C:P	2.32	0.88
1:A:978:A:O2'	22:S:37:ARG:NH2	2.06	0.88
1:A:975:A:N7	1:A:1357:A:H2	1.73	0.87
2:V:7:U:C4	2:V:49:C:C5	2.61	0.87
1:A:579:G:H4'	1:A:728:A:H1'	1.55	0.87
1:A:1024:G:O3'	1:A:1025:U:P	2.31	0.87
1:A:243:A:H4'	1:A:244:U:H5'	1.57	0.87
1:A:266:G:H22	1:A:270:A:H62	1.20	0.87
5:B:32:ILE:HD11	5:B:40:HIS:HB3	1.57	0.87

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:551:U:H5'	15:L:119:LYS:HE2	1.53	0.87
1:A:1320:C:H42	22:S:36:ARG:CG	1.79	0.87
7:D:23:GLY:O	7:D:112:VAL:HG12	1.75	0.87
3:W:45:G:O3'	3:W:46:G:C5'	2.22	0.87
1:A:37:U:O2	1:A:397:A:N6	2.07	0.87
1:A:891:U:H2'	1:A:892:A:H8	1.36	0.87
3:W:25:C:N4	3:W:26:G:C6	2.41	0.87
1:A:32:A:H2'	1:A:33:A:C8	2.10	0.87
1:A:988:G:H4'	1:A:1014:A:N6	1.90	0.87
13:J:61:GLU:OE1	17:N:49:HIS:HE1	1.58	0.87
7:D:9:CYS:SG	7:D:31:CYS:CA	2.63	0.87
13:J:46:ARG:HH11	17:N:59:ALA:CB	1.85	0.87
1:A:1400:C:C5	2:V:34:G:N1	2.43	0.86
1:A:983:A:C3'	1:A:984:C:P	2.63	0.86
1:A:173:U:H5'	1:A:197:A:H5'	1.57	0.86
1:A:60:A:H62	1:A:110:C:N4	1.72	0.86
1:A:463:A:P	19:P:75:ARG:HH22	1.98	0.86
3:W:37:YYG:O22	10:G:85:TYR:N	2.08	0.86
1:A:173:U:H5	1:A:198:G:HO2'	0.87	0.86
7:D:127:THR:HB	7:D:147:ALA:HB3	1.58	0.86
1:A:1289:A:C2	1:A:1372:U:H4'	2.10	0.86
7:D:23:GLY:C	7:D:112:VAL:HG12	1.94	0.86
3:W:40:C:O2'	10:G:147:ALA:HB3	1.75	0.86
1:A:790:A:O5'	2:V:38:A:O2'	1.92	0.86
16:M:94:ARG:H	16:M:95:GLY:N	1.73	0.86
1:A:1211:U:H3'	1:A:1212:U:OP1	1.76	0.86
7:D:15:GLU:HG2	7:D:63:LYS:CB	2.04	0.86
1:A:939:G:H5''	10:G:102:ARG:CZ	2.05	0.86
3:W:25:C:C6	3:W:26:G:C8	2.64	0.85
1:A:958:A:N3	22:S:55:LYS:HB2	1.91	0.85
1:A:1060:C:C5'	13:J:51:ARG:HB3	2.05	0.85
16:M:91:ARG:O	16:M:96:LEU:N	2.08	0.85
2:V:7:U:O4	2:V:49:C:C4	2.29	0.85
9:F:50:TYR:HE1	21:R:77:GLY:HA2	1.39	0.85
1:A:495:U:H2'	1:A:496:A:H5'	1.58	0.85
1:A:932:C:OP1	10:G:4:ARG:HG2	1.75	0.85
1:A:1224:G:O3'	1:A:1225:A:P	2.33	0.85
16:M:92:HIS:CG	16:M:98:VAL:HG21	2.11	0.85
20:Q:8:GLY:HA3	20:Q:22:LEU:O	1.75	0.85
20:Q:21:VAL:HG12	20:Q:23:VAL:HG23	1.58	0.85
1:A:1237:C:O2'	1:A:1300:G:N2	2.09	0.85
1:A:668:G:N3	18:O:46:HIS:NE2	2.23	0.85

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
16:M:92:HIS:CD2	16:M:98:VAL:CG2	2.51	0.85
3:W:37:YYG:O23	10:G:83:ALA:CA	2.24	0.85
1:A:196:A:O3'	1:A:197:A:OP2	1.89	0.85
16:M:91:ARG:NH1	16:M:103:THR:HG22	1.65	0.85
1:A:116:A:H61	1:A:313:A:H1'	1.42	0.85
1:A:1318:A:O2'	22:S:37:ARG:CB	2.21	0.85
3:W:37:YYG:C21	10:G:83:ALA:HB3	1.89	0.85
1:A:559:A:H4'	1:A:560:U:O5'	1.75	0.85
1:A:173:U:C5	1:A:198:G:H1'	2.11	0.85
16:M:122:LYS:NZ	25:Y:154:GLY:CA	2.40	0.85
1:A:811:C:OP1	1:A:898:G:H5'	1.75	0.84
1:A:1327:C:H5''	24:U:20:LYS:HE2	1.57	0.84
1:A:1219:U:O2'	22:S:34:TRP:CB	2.19	0.84
3:W:72:C:C2'	3:W:73:A:C5'	2.55	0.84
7:D:31:CYS:O	7:D:33:MET:N	2.09	0.84
1:A:579:G:O5'	1:A:728:A:O2'	1.96	0.84
1:A:406:G:H21	7:D:119:GLN:HE22	1.22	0.84
1:A:695:A:C2	1:A:787:A:H4'	2.13	0.84
2:V:65:G:H3'	2:V:66:A:OP2	1.78	0.83
1:A:406:G:N2	1:A:437:U:O2	2.11	0.83
1:A:1250:A:N3	1:A:1370:G:O2'	2.11	0.83
1:A:1005:A:H5'	1:A:1037:C:O2	1.78	0.83
4:X:119:U:H2'	4:X:120:A:C8	2.13	0.83
3:W:65:G:H2'	3:W:66:A:O4'	1.77	0.83
1:A:600:C:OP1	11:H:97:VAL:HB	1.78	0.83
1:A:979:C:OP1	1:A:1223:C:N4	2.11	0.83
7:D:15:GLU:CG	7:D:63:LYS:HB3	2.07	0.83
1:A:1180:A:O2'	1:A:1184:G:H1'	1.78	0.83
1:A:1061:G:H5'	13:J:59:SER:OG	1.77	0.83
1:A:410:G:P	7:D:25:ARG:HG3	2.18	0.83
1:A:674:G:H2'	1:A:675:A:H8	1.44	0.83
1:A:47:C:H4'	1:A:48:C:C5'	2.08	0.83
3:W:40:C:O3'	10:G:147:ALA:CB	2.26	0.83
1:A:922:G:N3	1:A:1398:A:H2	1.77	0.83
1:A:1190:G:H5'	6:C:176:HIS:NE2	1.93	0.83
2:V:25:C:H2'	2:V:26:G:O5'	1.77	0.83
6:C:12:LEU:CD2	17:N:51:GLY:HA3	2.08	0.82
2:V:35:A:N6	4:X:117:U:C4	2.47	0.82
4:X:120:A:H2'	4:X:121:G:H8	1.40	0.82
1:A:986:A:C1'	22:S:55:LYS:HA	2.09	0.82
1:A:1347:G:H22	1:A:1373:G:H2'	1.42	0.82
1:A:65:U:C4'	1:A:199:G:O2'	2.26	0.82

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
4:X:119:U:H2'	4:X:120:A:H8	1.43	0.82
3:W:25:C:C6	3:W:26:G:N7	2.47	0.82
16:M:92:HIS:NE2	16:M:98:VAL:HG21	1.93	0.82
6:C:91:LEU:HD21	6:C:99:VAL:H	1.44	0.82
3:W:33:U:O2	3:W:35:A:H3'	1.80	0.82
3:W:25:C:N1	3:W:26:G:N9	2.28	0.82
1:A:946:A:N3	1:A:1333:A:C2	2.48	0.82
1:A:946:A:N3	1:A:1333:A:H2	1.77	0.82
1:A:1391:U:H2'	1:A:1392:G:H8	1.45	0.82
1:A:1319:A:H5'	22:S:70:LYS:HE2	1.60	0.82
1:A:429:U:P	7:D:13:ARG:HE	2.02	0.82
1:A:1221:G:H5''	1:A:1321:C:O2	1.80	0.82
6:C:18:TRP:HB3	6:C:20:SER:O	1.80	0.82
1:A:280:C:O2	20:Q:39:SER:N	2.12	0.82
5:B:174:VAL:O	5:B:178:ARG:HB2	1.79	0.82
1:A:1400:C:C4	2:V:34:G:C2	2.68	0.82
1:A:279:A:N7	20:Q:95:TYR:HE2	1.77	0.82
1:A:939:G:H5''	10:G:102:ARG:HH22	1.43	0.82
1:A:975:A:C4	1:A:1357:A:H2	1.90	0.82
17:N:24:CYS:HB3	17:N:40:CYS:H	1.42	0.82
16:M:92:HIS:CE1	16:M:110:ARG:NH2	2.48	0.81
13:J:11:PHE:CD2	17:N:55:GLY:HA3	2.15	0.81
1:A:947:G:H4'	1:A:1332:A:H2	1.43	0.81
1:A:815:A:C2	1:A:1528:U:H1'	2.13	0.81
7:D:78:LEU:HD21	7:D:139:ARG:HH21	1.45	0.81
1:A:769:G:H21	1:A:900:A:H61	1.24	0.81
1:A:1237:C:HO2'	1:A:1300:G:H22	1.27	0.81
6:C:18:TRP:CD1	17:N:51:GLY:O	2.32	0.81
11:H:18:ARG:HG3	11:H:18:ARG:HH11	1.44	0.81
1:A:562:C:O2'	15:L:15:ARG:HB3	1.80	0.81
18:O:87:ILE:O	18:O:88:ARG:HB2	1.78	0.81
13:J:49:VAL:HG11	17:N:45:ARG:HB2	1.62	0.81
1:A:1312:G:O6	22:S:2:PRO:O	1.98	0.81
1:A:1329:A:O2'	16:M:24:GLY:HA2	1.79	0.81
16:M:91:ARG:HD3	16:M:96:LEU:HD12	1.62	0.81
3:W:37:YYG:H102	10:G:83:ALA:HB1	1.48	0.81
1:A:279:A:C8	20:Q:95:TYR:HE2	1.98	0.81
1:A:1317:C:O2'	22:S:10:PHE:CE1	2.34	0.81
1:A:22:G:H1'	1:A:914:A:N6	1.96	0.81
8:E:144:THR:O	8:E:147:ASP:HB2	1.81	0.80
1:A:1367:C:OP1	12:I:114:TYR:HA	1.80	0.80
21:R:73:ALA:HB1	21:R:79:LEU:HD11	1.63	0.80

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
5:B:54:THR:HG21	5:B:201:ILE:HD11	1.62	0.80
1:A:1311:G:N7	22:S:2:PRO:N	2.29	0.80
9:F:50:TYR:CE1	21:R:77:GLY:HA2	2.15	0.80
1:A:790:A:C5'	2:V:38:A:O2'	2.29	0.80
2:V:65:G:O3'	2:V:66:A:O5'	1.99	0.80
1:A:1005:A:C4	1:A:1036:G:N2	2.50	0.80
1:A:971:G:N2	1:A:1363:A:OP2	2.13	0.80
2:V:34:G:C3'	2:V:35:A:H5''	2.11	0.80
3:W:25:C:C2	3:W:26:G:N9	2.48	0.80
1:A:975:A:N9	1:A:1357:A:H2	1.70	0.80
13:J:51:ARG:HB2	13:J:59:SER:CB	2.07	0.80
1:A:1221:G:C5'	22:S:36:ARG:HH12	1.94	0.80
6:C:18:TRP:NE1	17:N:53:LEU:O	2.14	0.80
1:A:571:U:O2	1:A:917:G:H4'	1.81	0.80
15:L:117:ARG:CZ	15:L:124:LYS:HD2	2.11	0.80
1:A:1182:G:H4'	1:A:1183:A:C5'	2.02	0.80
1:A:579:G:C4'	1:A:728:A:H1'	2.12	0.80
1:A:813:U:OP1	1:A:904:C:H5'	1.80	0.80
1:A:988:G:O2'	1:A:1015:A:N6	2.15	0.80
1:A:1318:A:H5'	22:S:10:PHE:HB3	1.63	0.80
1:A:1221:G:OP1	1:A:1320:C:N4	2.15	0.80
16:M:98:VAL:HG23	16:M:110:ARG:HH21	1.47	0.80
1:A:1320:C:C4	22:S:36:ARG:HG3	2.15	0.80
2:V:7:U:C4	2:V:49:C:C4	2.70	0.80
16:M:23:TYR:CE2	16:M:70:LEU:HD22	2.13	0.80
1:A:41:G:H2'	1:A:42:G:H8	1.46	0.80
1:A:1288:A:N1	1:A:1371:G:C1'	2.41	0.80
1:A:65:U:C4	1:A:200:G:O2'	2.35	0.80
1:A:436:C:C2'	1:A:437:U:C6	2.64	0.80
1:A:250:A:H4'	1:A:251:G:O5'	1.82	0.80
1:A:1240:U:O4'	10:G:42:ILE:HD11	1.82	0.80
1:A:129(A):G:O2'	1:A:190(E):U:H3'	1.81	0.80
1:A:767:A:N6	1:A:813:U:H3	1.80	0.79
1:A:1400:C:C6	2:V:34:G:N1	2.50	0.79
1:A:1339:A:C2	2:V:31:A:H1'	2.17	0.79
1:A:1291:G:H5'	12:I:40:LEU:CD2	2.12	0.79
1:A:977:A:H62	1:A:1224:G:P	2.00	0.79
1:A:21:G:C2	1:A:915:A:N6	2.50	0.79
1:A:25:C:H4'	1:A:524:G:N2	1.96	0.79
1:A:302:G:H2'	1:A:556:C:H5''	1.63	0.79
3:W:24:G:O6	3:W:45:G:N2	2.15	0.79
1:A:1205:U:H4'	6:C:195:VAL:CG2	2.13	0.79

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:1148:U:H5'	12:I:5:TYR:OH	1.83	0.79
1:A:173:U:C5'	1:A:197:A:H5'	2.12	0.79
1:A:65:U:C6	1:A:200:G:C4'	2.65	0.79
1:A:501:C:P	15:L:124:LYS:HD3	2.22	0.79
1:A:254:G:H21	20:Q:16:GLN:CD	1.86	0.79
20:Q:15:MET:HB3	20:Q:18:THR:HB	1.64	0.79
1:A:1058:G:OP1	6:C:199:LYS:HE3	1.83	0.79
1:A:1494:G:OP1	25:Y:117:GLY:CA	2.30	0.79
1:A:1059:C:H2'	13:J:52:GLY:HA2	1.65	0.79
1:A:651:C:O3'	1:A:652:U:P	2.41	0.79
1:A:20:U:O4'	1:A:572:A:N1	2.16	0.79
1:A:162:A:N3	1:A:348:G:H4'	1.98	0.79
3:W:25:C:N1	3:W:26:G:C4	2.51	0.79
1:A:976:G:OP2	1:A:1358:U:O4'	2.00	0.79
19:P:20:VAL:HG11	19:P:32:TYR:HB2	1.64	0.79
3:W:72:C:C2'	3:W:73:A:O4'	2.31	0.79
1:A:279:A:C8	20:Q:95:TYR:CE2	2.71	0.79
13:J:64:GLU:OE1	17:N:57:ARG:HB3	1.83	0.79
1:A:60:A:H61	1:A:107:G:HO2'	1.30	0.79
19:P:6:LEU:HB2	19:P:17:TYR:HB3	1.63	0.79
4:X:120:A:H2	25:Y:193:HIS:CA	1.49	0.78
1:A:1318:A:H5'	22:S:10:PHE:CD2	2.17	0.78
19:P:20:VAL:HG11	19:P:32:TYR:CB	2.13	0.78
1:A:563:A:C2	15:L:15:ARG:NH1	2.51	0.78
1:A:983:A:H3'	1:A:984:C:P	2.23	0.78
3:W:25:C:N4	3:W:26:G:H1	1.81	0.78
1:A:978:A:H1'	22:S:37:ARG:HH12	1.47	0.78
1:A:563:A:H2	15:L:15:ARG:NH1	1.81	0.78
1:A:1358:U:H5''	17:N:33:VAL:O	1.82	0.78
3:W:9:A:C2	3:W:45:G:C5	2.71	0.78
6:C:11:ARG:HG2	6:C:15:THR:O	1.82	0.78
1:A:15:G:O6	1:A:1396:A:N6	2.16	0.78
3:W:45:G:HO3'	3:W:46:G:H5'	1.43	0.78
1:A:275:G:H4'	20:Q:14:LYS:HB3	1.64	0.78
1:A:991:U:O3'	1:A:992:U:P	2.42	0.78
1:A:737:A:H4'	9:F:72:VAL:HG11	1.63	0.78
6:C:12:LEU:HD21	17:N:51:GLY:HA3	1.66	0.78
1:A:497:A:O2'	1:A:498:U:P	2.41	0.78
3:W:9:A:N1	3:W:45:G:C6	2.52	0.78
19:P:20:VAL:CG1	19:P:32:TYR:HB2	2.13	0.78
1:A:571:U:H3'	1:A:572:A:C5'	2.13	0.78
7:D:141:ARG:HB3	7:D:142:PRO:HD2	1.65	0.78

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
5:B:180:LEU:O	5:B:181:PHE:HB2	1.81	0.78
6:C:9:GLY:N	17:N:49:HIS:O	2.17	0.78
2:V:70:C:H2'	2:V:71:G:H8	1.47	0.78
1:A:43:C:OP1	19:P:12:LYS:HB3	1.84	0.78
12:I:11:LYS:HG3	12:I:108:VAL:HG11	1.66	0.77
1:A:1502:A:H2	1:A:1505:G:H1	0.82	0.77
1:A:540:G:O2'	7:D:42:GLN:NE2	2.17	0.77
6:C:106:VAL:HG12	6:C:108:ASN:H	1.49	0.77
3:W:1:G:H21	3:W:2:C:N4	1.80	0.77
1:A:403:C:N4	1:A:547:A:H5'	1.99	0.77
1:A:1366:C:OP2	12:I:117:HIS:NE2	2.18	0.77
1:A:501:C:OP1	15:L:124:LYS:HD3	1.84	0.77
1:A:303:A:O2'	1:A:555:C:O2'	2.00	0.77
2:V:5:A:H2'	2:V:6:U:H6	1.48	0.77
1:A:1062:U:OP1	13:J:58:ASP:OD2	2.03	0.77
1:A:1298:C:N4	10:G:114:ARG:O	2.18	0.77
1:A:302:G:N3	1:A:556:C:H4'	1.98	0.77
1:A:1181:G:H4'	1:A:1184:G:C4'	2.14	0.77
21:R:53:ARG:HD2	21:R:58:LEU:O	1.84	0.77
2:V:35:A:N1	4:X:118:C:C2	2.40	0.77
1:A:65:U:C2	1:A:200:G:H1'	2.19	0.77
1:A:1320:C:C2	22:S:72:GLY:C	2.57	0.77
1:A:886:G:N2	1:A:912:C:H1'	1.99	0.77
1:A:1376:U:H2'	1:A:1377:A:C8	2.20	0.77
1:A:1375:A:OP1	10:G:28:ASN:ND2	2.18	0.77
3:W:37:YYG:C19	10:G:83:ALA:O	2.33	0.77
1:A:1256:A:H61	1:A:1278:U:H1'	1.50	0.77
1:A:986:A:C2	22:S:52:TYR:CE2	2.73	0.76
1:A:436:C:O2'	1:A:437:U:O4'	2.02	0.76
3:W:72:C:C2'	3:W:73:A:H5'	2.13	0.76
1:A:173:U:H5	1:A:198:G:O2'	1.68	0.76
1:A:509:A:H8	7:D:54:TYR:HE2	1.32	0.76
1:A:988:G:H21	1:A:1016:A:H1'	1.50	0.76
1:A:3(A):G:C6	1:A:1037:C:N3	2.52	0.76
1:A:1098:C:C4'	1:A:1167:A:C2	2.56	0.76
1:A:1118:C:H1'	1:A:1179:A:C8	2.20	0.76
1:A:979:C:C5'	1:A:1222:G:O6	2.33	0.76
3:W:37:YYG:H192	10:G:78:ARG:O	1.84	0.76
7:D:15:GLU:OE1	7:D:59:ARG:NH2	2.17	0.76
1:A:462:G:H21	19:P:82:GLN:HE21	1.34	0.76
1:A:1221:G:H1'	22:S:54:GLY:HA3	1.66	0.76
1:A:263:A:OP1	23:T:75:ASN:HB2	1.85	0.76

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:1060:C:H5''	13:J:51:ARG:HB3	1.66	0.76
17:N:40:CYS:O	17:N:43:CYS:SG	2.44	0.76
1:A:563:A:H2	15:L:15:ARG:HH12	1.34	0.76
16:M:122:LYS:CD	25:Y:153:GLY:CA	2.63	0.76
2:V:48:C:O2	2:V:48:C:H2'	1.84	0.76
1:A:562:C:H1'	15:L:15:ARG:HD2	1.68	0.76
13:J:46:ARG:NH1	17:N:59:ALA:CB	2.46	0.76
1:A:891:U:H2'	1:A:892:A:C8	2.20	0.76
1:A:1286:A:H62	1:A:1354:C:H5''	1.51	0.76
1:A:1376:U:H5''	10:G:94:ARG:HH22	1.51	0.75
20:Q:44:ALA:CB	20:Q:59:ILE:HD11	2.16	0.75
8:E:51:VAL:HB	8:E:52:PRO:HD3	1.67	0.75
1:A:673:G:H2'	1:A:674:G:C8	2.21	0.75
2:V:40:C:C2'	2:V:41:U:H5''	2.15	0.75
1:A:261:U:C5	23:T:79:ARG:NH2	2.53	0.75
1:A:979:C:OP1	1:A:1222:G:O6	2.04	0.75
8:E:95:ALA:HB3	8:E:96:PRO:HD3	1.68	0.75
1:A:1199:U:H4'	13:J:54:PHE:CE2	2.22	0.75
1:A:20:U:O4'	1:A:572:A:C6	2.40	0.75
20:Q:87:LYS:O	20:Q:91:ARG:HB3	1.87	0.75
1:A:578:C:O2	1:A:728:A:H2	1.69	0.75
1:A:986:A:N3	22:S:52:TYR:CZ	2.54	0.75
5:B:163:PHE:HA	5:B:185:ILE:O	1.87	0.75
1:A:693:G:H2'	1:A:694:A:C8	2.22	0.75
2:V:66:A:H2'	2:V:67:A:C8	2.22	0.75
3:W:31:A:N3	10:G:144:MET:HE2	2.02	0.75
7:D:109:GLY:HA3	7:D:165:MET:HG3	1.68	0.75
1:A:988:G:N2	1:A:1016:A:H1'	2.01	0.74
16:M:88:ARG:HB2	16:M:98:VAL:CG1	2.16	0.74
16:M:122:LYS:NZ	25:Y:153:GLY:CA	2.50	0.74
1:A:1117:G:H21	1:A:1180:A:H1'	1.52	0.74
1:A:1206:G:O4'	6:C:194:GLY:HA2	1.87	0.74
1:A:1502:A:C2	1:A:1505:G:N1	2.38	0.74
1:A:463:A:P	19:P:75:ARG:NH2	2.60	0.74
1:A:1201:A:H4'	1:A:1202:G:H5''	1.68	0.74
1:A:1298:C:P	10:G:114:ARG:HH12	2.11	0.74
1:A:1181:G:H4'	1:A:1184:G:O4'	1.88	0.74
11:H:36:LEU:HA	11:H:39:LEU:HB2	1.70	0.74
1:A:1308:U:H5'	16:M:110:ARG:NH2	2.01	0.74
1:A:1318:A:C5'	22:S:10:PHE:HB3	2.18	0.74
1:A:1199:U:C4'	13:J:54:PHE:CE2	2.71	0.74
1:A:1315:U:P	22:S:6:LYS:HZ2	2.09	0.74

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
16:M:66:LEU:C	16:M:70:LEU:HB2	2.07	0.74
1:A:137:C:O2'	19:P:61:SER:O	2.04	0.74
1:A:948:C:H4'	1:A:1306:A:O3'	1.88	0.74
1:A:745:C:H1'	1:A:836:G:O2'	1.88	0.74
15:L:54:LYS:CG	15:L:75:HIS:HE1	2.01	0.74
1:A:47:C:H4'	1:A:48:C:H5''	1.69	0.74
1:A:1286:A:N6	1:A:1355:G:P	2.61	0.74
3:W:65:G:C6	3:W:66:A:C5	2.77	0.73
2:V:4:G:H2'	2:V:5:A:C8	2.23	0.73
1:A:1095:U:OP2	1:A:1108:G:N1	2.15	0.73
1:A:136:C:O2'	19:P:63:GLY:HA3	1.86	0.73
1:A:1318:A:H4'	22:S:10:PHE:CD2	2.23	0.73
3:W:37:YYG:H31	3:W:37:YYG:C1'	2.18	0.73
1:A:1005:A:H5'	1:A:1037:C:C1'	2.15	0.73
1:A:3(A):G:N1	1:A:1037:C:C2	2.56	0.73
1:A:60:A:N6	1:A:107:G:HO2'	1.82	0.73
1:A:900:A:H2'	1:A:901:A:C8	2.23	0.73
1:A:634:C:H2'	1:A:635:G:H8	1.52	0.73
1:A:1237:C:O2	1:A:1335:C:H5'	1.88	0.73
1:A:266:G:N2	1:A:270:A:H62	1.85	0.73
1:A:1250:A:H4'	12:I:67:GLY:C	2.08	0.73
1:A:1059:C:C2'	13:J:52:GLY:HA2	2.18	0.73
1:A:953:G:H1'	16:M:125:ARG:O	1.89	0.73
11:H:44:PHE:O	11:H:64:LYS:HB3	1.88	0.73
3:W:39:PSU:C5'	14:K:54:ARG:HH22	2.01	0.73
1:A:376:G:O3'	19:P:5:ARG:NH1	2.21	0.73
16:M:122:LYS:HZ3	25:Y:153:GLY:CA	2.00	0.73
1:A:54:C:N4	1:A:352:C:H2'	2.04	0.73
3:W:25:C:C2	3:W:26:G:H1'	2.23	0.73
1:A:1097:C:O2	1:A:1168:A:H2	1.70	0.73
1:A:267:C:OP2	20:Q:67:LYS:HD3	1.88	0.73
1:A:1391:U:H2'	1:A:1392:G:C8	2.23	0.73
1:A:762:C:H2'	1:A:763:G:C8	2.24	0.73
20:Q:44:ALA:HB2	20:Q:59:ILE:HD11	1.70	0.73
1:A:1181:G:H4'	1:A:1184:G:H5'	1.71	0.73
1:A:976:G:OP2	1:A:1358:U:C1'	2.37	0.73
16:M:94:ARG:C	16:M:95:GLY:HA3	2.06	0.73
3:W:9:A:C2	3:W:45:G:C4	2.77	0.73
1:A:20:U:C4	1:A:916:G:N1	2.57	0.73
1:A:1298:C:P	10:G:114:ARG:NH1	2.62	0.73
6:C:150:LYS:HB2	6:C:173:VAL:HG21	1.70	0.73
10:G:74:GLU:HG2	10:G:75:VAL:H	1.52	0.73

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:1226:C:C4	16:M:104:ARG:HG3	2.23	0.72
1:A:761:G:H1'	20:Q:103:GLY:O	1.89	0.72
19:P:13:HIS:O	19:P:15:PRO:HD3	1.88	0.72
7:D:11:LEU:C	7:D:13:ARG:H	1.93	0.72
1:A:462:G:H21	19:P:82:GLN:NE2	1.86	0.72
10:G:77:SER:HB3	10:G:84:ASN:HB3	1.71	0.72
5:B:170:GLU:HG3	5:B:173:ALA:HB3	1.70	0.72
20:Q:67:LYS:O	20:Q:68:ARG:HB2	1.90	0.72
1:A:1222:G:P	1:A:1321:C:O2	2.48	0.72
1:A:126:G:OP1	1:A:633:G:N2	2.22	0.72
3:W:25:C:C6	3:W:26:G:C4	2.77	0.72
1:A:976:G:O5'	1:A:1358:U:H1'	1.88	0.72
1:A:668:G:H5'	18:O:48:LYS:O	1.89	0.72
1:A:217:C:O2'	1:A:461:C:N4	2.23	0.72
1:A:1123:A:O2'	13:J:38:ILE:HG22	1.90	0.72
1:A:361(A):C:O3'	1:A:1362:C:P	2.47	0.72
3:W:37:YYG:H31	3:W:37:YYG:C2'	2.20	0.72
1:A:1404:C:O2	1:A:1519:A:O2'	2.08	0.72
6:C:48:TYR:OH	6:C:122:GLU:CD	2.28	0.72
1:A:652:U:H1'	1:A:653:A:C2	2.20	0.72
1:A:1237:C:C3'	1:A:1238:A:P	2.78	0.72
3:W:37:YYG:O22	10:G:84:ASN:O	2.07	0.72
1:A:429:U:OP2	7:D:13:ARG:NH2	2.23	0.72
1:A:173:U:H5'	1:A:197:A:C5'	2.19	0.72
1:A:427:U:H5'	7:D:41:GLY:HA2	1.69	0.72
1:A:976:G:OP2	1:A:1358:U:C4'	2.38	0.71
1:A:18:C:H42	1:A:917:G:H1	1.35	0.71
1:A:20:U:N3	1:A:916:G:C2	2.58	0.71
1:A:1242:C:O2'	1:A:1303:C:H5''	1.89	0.71
11:H:27:PRO:HB2	11:H:32:LYS:HZ3	1.55	0.71
1:A:20:U:O4'	1:A:572:A:C2	2.43	0.71
1:A:426:G:O2'	7:D:42:GLN:N	2.23	0.71
3:W:37:YYG:C21	10:G:84:ASN:C	2.58	0.71
1:A:1339:A:C2	2:V:31:A:C1'	2.74	0.71
1:A:1181:G:H4'	1:A:1184:G:C5'	2.20	0.71
1:A:427:U:H1'	1:A:541:G:OP1	1.90	0.71
1:A:426:G:H4'	7:D:41:GLY:O	1.89	0.71
2:V:14:A:H2'	2:V:15:G:H8	1.55	0.71
1:A:574:A:N3	1:A:883:C:H1'	2.05	0.71
5:B:75:LYS:HA	5:B:78:GLN:HB2	1.73	0.71
1:A:1226:C:OP2	16:M:103:THR:OG1	2.08	0.71
6:C:9:GLY:HA3	17:N:49:HIS:O	1.88	0.71

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:410:G:OP2	7:D:25:ARG:NE	2.23	0.71
6:C:106:VAL:HG12	6:C:108:ASN:N	2.05	0.71
1:A:965:A:O2'	1:A:966:G:H5''	1.91	0.71
3:W:72:C:HO2'	3:W:73:A:C4'	1.94	0.71
1:A:958:A:C2	22:S:55:LYS:CB	2.58	0.71
16:M:94:ARG:HB2	16:M:96:LEU:HD21	1.73	0.71
1:A:1318:A:C5'	22:S:10:PHE:CB	2.68	0.71
1:A:586:C:H5'	1:A:879:C:OP1	1.90	0.71
8:E:9:LYS:HD2	8:E:112:LEU:HD23	1.72	0.71
1:A:265:G:H4'	20:Q:66:SER:H	1.55	0.71
20:Q:15:MET:CB	20:Q:18:THR:HB	2.21	0.71
6:C:16:ARG:NH2	6:C:184:TYR:H	1.89	0.71
13:J:34:VAL:HG12	13:J:36:GLY:H	1.56	0.70
1:A:983:A:H4'	17:N:3:ARG:HH22	1.56	0.70
23:T:67:ALA:HA	23:T:72:LEU:O	1.91	0.70
1:A:922:G:N3	1:A:1398:A:C2	2.58	0.70
1:A:791:G:H22	1:A:1498:U:P	2.13	0.70
1:A:1358:U:OP1	17:N:34:TYR:HA	1.91	0.70
7:D:31:CYS:C	7:D:33:MET:H	1.95	0.70
16:M:122:LYS:HZ3	25:Y:154:GLY:CA	2.02	0.70
1:A:279:A:H5'	1:A:280:C:H3'	1.73	0.70
7:D:20:TYR:O	7:D:22:LYS:N	2.23	0.70
1:A:1240:U:N3	10:G:30:ILE:O	2.24	0.70
1:A:947:G:C4'	1:A:1332:A:H2	2.05	0.70
1:A:409:G:O3'	7:D:25:ARG:HG3	1.90	0.70
1:A:1250:A:H4'	12:I:67:GLY:HA2	1.74	0.70
19:P:11:SER:H	19:P:14:ASN:HB3	1.55	0.70
1:A:1314:C:C6	22:S:6:LYS:HG2	2.25	0.70
1:A:1037:C:O3'	1:A:1038:C:P	2.49	0.70
3:W:40:C:O2'	10:G:147:ALA:CB	2.39	0.70
10:G:145:ALA:O	10:G:146:GLU:HB3	1.90	0.70
6:C:12:LEU:HD11	17:N:51:GLY:CA	2.20	0.70
5:B:112:VAL:HA	5:B:115:LEU:HB3	1.71	0.70
3:W:7:U:O2'	3:W:49:C:OP2	2.08	0.70
1:A:1086:U:H2'	1:A:1087:G:C8	2.26	0.70
1:A:1224:G:HO3'	1:A:1225:A:P	2.13	0.70
2:V:69:U:H2'	2:V:70:C:C6	2.27	0.70
1:A:944:G:O6	1:A:1337:G:H8	1.75	0.70
1:A:1329:A:H5''	16:M:26:GLY:N	2.07	0.70
1:A:926:G:N1	4:X:116:U:OP1	2.24	0.70
1:A:1315:U:OP2	22:S:6:LYS:CD	2.40	0.70
1:A:815:A:O2'	1:A:1527:C:C1'	2.38	0.70

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:25:C:C4'	1:A:524:G:H21	2.05	0.70
15:L:28:LYS:HB2	15:L:30:ALA:HB2	1.72	0.70
15:L:45:PRO:HD2	15:L:50:SER:HA	1.74	0.70
1:A:1221:G:H5''	1:A:1321:C:C2	2.27	0.69
1:A:769:G:N2	1:A:900:A:H61	1.90	0.69
1:A:1291:G:H4'	12:I:38:GLN:O	1.92	0.69
1:A:1125:U:O4	13:J:5:ARG:NH1	2.24	0.69
7:D:3:ARG:HG3	7:D:118:ARG:HH11	1.55	0.69
1:A:255:G:H1'	20:Q:16:GLN:NE2	2.07	0.69
1:A:541:G:H4'	7:D:42:GLN:HB2	1.74	0.69
1:A:574:A:HO2'	1:A:882:C:C2'	2.04	0.69
21:R:80:PRO:O	21:R:82:THR:N	2.23	0.69
1:A:566:G:H8	1:A:566:G:O5'	1.75	0.69
7:D:24:GLU:HB2	7:D:112:VAL:HG11	1.72	0.69
1:A:275:G:H5'	20:Q:14:LYS:HD3	1.74	0.69
1:A:518:C:H2'	1:A:530:G:C8	2.27	0.69
3:W:14:A:C5	3:W:22:G:C2	2.81	0.69
1:A:1288:A:C6	1:A:1371:G:H1'	2.27	0.69
2:V:4:G:H2'	2:V:5:A:H8	1.54	0.69
7:D:185:PHE:HE2	7:D:189:PRO:HD3	1.55	0.69
1:A:15:G:H1'	8:E:19:MET:SD	2.32	0.69
3:W:9:A:N3	3:W:45:G:H2'	2.07	0.69
1:A:1190:G:H5'	6:C:176:HIS:CE1	2.27	0.69
7:D:12:CYS:O	7:D:33:MET:HB3	1.92	0.69
16:M:122:LYS:HZ1	25:Y:154:GLY:CA	2.03	0.69
1:A:426:G:O2'	7:D:42:GLN:CA	2.40	0.69
17:N:27:CYS:SG	17:N:43:CYS:N	2.60	0.69
1:A:65:U:C5	1:A:200:G:H4'	2.26	0.69
1:A:1181:G:O3'	1:A:1184:G:H5'	1.93	0.69
3:W:34:G:OP1	3:W:34:G:H8	1.75	0.69
21:R:53:ARG:HH11	21:R:59:SER:HA	1.58	0.69
1:A:1492:A:H2'	1:A:1493:A:O4'	1.93	0.69
7:D:62:GLN:HE22	7:D:65:ARG:HH11	1.40	0.69
13:J:90:LEU:H	13:J:91:PRO:HD2	1.56	0.69
6:C:156:ARG:HB2	6:C:196:LEU:HD22	1.75	0.69
3:W:37:YYG:N20	3:W:37:YYG:H101	2.07	0.69
1:A:665:A:C1'	1:A:733:A:H1'	2.22	0.69
1:A:1340:A:O4'	2:V:31:A:O2'	2.10	0.69
1:A:778:G:H2'	1:A:779:C:C6	2.28	0.69
3:W:31:A:N3	10:G:144:MET:CE	2.55	0.69
3:W:7:U:O3'	3:W:8:U:P	2.51	0.69
2:V:60:C:H5'	2:V:61:C:OP2	1.93	0.69

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:1222:G:OP1	1:A:1321:C:O2'	2.10	0.68
1:A:1199:U:O4'	13:J:54:PHE:CE2	2.46	0.68
1:A:1198:G:O2'	13:J:55:LYS:HE3	1.93	0.68
3:W:37:YYG:H31	3:W:37:YYG:H1'	1.74	0.68
8:E:16:THR:O	8:E:26:PHE:HB2	1.92	0.68
3:W:9:A:C6	3:W:45:G:N1	2.60	0.68
18:O:45:VAL:O	18:O:46:HIS:HB2	1.93	0.68
1:A:586:C:H1'	1:A:878:G:O2'	1.93	0.68
1:A:13:U:H3	1:A:21:G:H1	1.39	0.68
1:A:1240:U:N3	10:G:30:ILE:HG22	2.08	0.68
2:V:19:G:H5'	2:V:20:G:OP2	1.94	0.68
1:A:559:A:H4'	1:A:560:U:C5'	2.23	0.68
3:W:40:C:C3'	10:G:147:ALA:HB1	2.22	0.68
18:O:28:GLN:O	18:O:32:LEU:HG	1.94	0.68
1:A:162:A:H1'	1:A:348:G:O2'	1.94	0.68
1:A:1060:C:O4'	13:J:52:GLY:HA3	1.93	0.68
1:A:529:G:C6	15:L:49:ASN:ND2	2.61	0.68
2:V:35:A:N6	4:X:117:U:N3	2.42	0.68
1:A:1357:A:O2'	17:N:34:TYR:CE2	2.45	0.68
7:D:12:CYS:CB	7:D:31:CYS:O	2.41	0.68
7:D:23:GLY:HA2	7:D:113:SER:HB3	1.74	0.68
1:A:989:C:O4'	1:A:1016:A:H2	1.76	0.68
13:J:53:PRO:O	13:J:54:PHE:HB3	1.93	0.68
1:A:1500:A:C5'	1:A:1508:G:H5''	2.11	0.68
1:A:1339:A:H2	2:V:31:A:C1'	2.07	0.68
1:A:1156:G:H3'	1:A:1157:A:P	2.33	0.68
1:A:126:G:H4'	1:A:634:C:O2'	1.94	0.68
7:D:152:SER:O	7:D:158:ILE:HG13	1.93	0.68
1:A:1221:G:OP1	1:A:1321:C:N4	2.27	0.68
1:A:1004:A:H5''	1:A:1025:U:C5	2.28	0.68
2:V:10:G:C6	2:V:26:G:C4	2.82	0.68
1:A:1329:A:H4'	16:M:24:GLY:O	1.94	0.68
12:I:53:VAL:HB	12:I:58:ARG:HH22	1.59	0.68
1:A:1289:A:C2	1:A:1372:U:C4'	2.77	0.68
1:A:376:G:C5'	19:P:5:ARG:HD2	2.23	0.68
1:A:22:G:C1'	1:A:914:A:N6	2.56	0.68
11:H:97:VAL:HG13	11:H:98:LYS:H	1.57	0.68
5:B:124:SER:HB2	5:B:125:PRO:HD2	1.75	0.68
1:A:584:G:H1	1:A:757:U:H3	1.40	0.68
8:E:80:ILE:HD13	8:E:138:ALA:HB1	1.75	0.68
1:A:411:A:OP2	7:D:25:ARG:NH2	2.27	0.68
1:A:1156:G:O2'	1:A:1180:A:N6	2.25	0.68

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:1493:A:H4'	25:Y:116:GLY:CA	2.23	0.68
8:E:103:GLY:O	8:E:107:ARG:HB2	1.94	0.68
1:A:1222:G:P	1:A:1322:C:C5	2.86	0.68
13:J:63:PHE:CE2	17:N:49:HIS:CE1	2.79	0.68
1:A:946:A:H61	1:A:1235:U:H3	1.41	0.68
1:A:1250:A:H4'	12:I:67:GLY:CA	2.24	0.68
11:H:23:SER:HB2	11:H:60:ARG:HD2	1.76	0.68
2:V:65:G:C2	2:V:66:A:C5	2.81	0.67
1:A:944:G:C3'	1:A:945:G:H5'	2.24	0.67
5:B:61:LEU:HA	5:B:64:ARG:HD2	1.76	0.67
1:A:1224:G:H4'	16:M:102:ARG:NH1	2.09	0.67
1:A:826:C:H4'	11:H:12:ARG:HG2	1.75	0.67
1:A:355:C:H1'	1:A:388:G:H2'	1.77	0.67
20:Q:22:LEU:HD12	20:Q:23:VAL:C	2.14	0.67
1:A:429:U:P	7:D:13:ARG:HH21	2.16	0.67
3:W:40:C:O2'	10:G:144:MET:HA	1.93	0.67
1:A:762:C:H5'	20:Q:104:LYS:HD3	1.76	0.67
1:A:1268:A:H4'	24:U:20:LYS:HA	1.75	0.67
1:A:1095:U:P	1:A:1108:G:H22	2.17	0.67
5:B:239:VAL:HG12	5:B:240:GLN:H	1.60	0.67
1:A:597:G:H21	11:H:94:TYR:HE2	1.42	0.67
1:A:236:G:C5'	20:Q:42:TYR:OH	2.42	0.67
1:A:32:A:H2'	1:A:33:A:H8	1.60	0.67
1:A:1060:C:H5'	13:J:52:GLY:H	1.59	0.67
1:A:761:G:HO2'	20:Q:104:LYS:HA	1.59	0.67
1:A:989:C:C4'	1:A:1016:A:H2	2.07	0.67
1:A:436:C:O2	1:A:437:U:C2	2.47	0.67
3:W:25:C:N1	3:W:26:G:C8	2.63	0.67
1:A:1289:A:H1'	1:A:1371:G:N2	2.10	0.67
2:V:69:U:H2'	2:V:70:C:H6	1.59	0.67
2:V:31:A:OP1	12:I:127:LYS:HG3	1.95	0.67
1:A:36:C:H4'	15:L:117:ARG:NH2	2.09	0.67
1:A:1297:C:O2'	10:G:114:ARG:HD3	1.95	0.67
1:A:1375:A:OP1	10:G:12:LEU:HD21	1.95	0.67
1:A:1340:A:H4'	2:V:31:A:O2'	1.94	0.67
3:W:44:A:C2'	3:W:45:G:H5'	2.25	0.67
1:A:254:G:H4'	20:Q:18:THR:OG1	1.95	0.67
1:A:43:C:OP1	19:P:12:LYS:CB	2.43	0.67
1:A:1298:C:H5''	1:A:1299:A:OP1	1.93	0.67
1:A:521:G:O6	15:L:49:ASN:ND2	2.28	0.67
7:D:98:GLU:OE2	7:D:103:ASN:ND2	2.24	0.67
1:A:1498:U:H1'	1:A:1499:A:C8	2.30	0.67

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:759:A:H5'	1:A:759:A:H8	1.60	0.67
1:A:1319:A:H4'	22:S:70:LYS:HZ3	0.57	0.67
1:A:1347:G:H3'	12:I:108:VAL:HA	1.76	0.67
1:A:3(A):G:C2	1:A:1037:C:O2	2.48	0.67
13:J:24:VAL:HA	13:J:34:VAL:HG11	1.76	0.66
1:A:1426:C:H42	1:A:1474:G:H1	1.42	0.66
2:V:35:A:N6	4:X:117:U:H3	1.93	0.66
1:A:1319:A:C5'	22:S:70:LYS:HE2	2.24	0.66
2:V:70:C:H2'	2:V:71:G:C8	2.29	0.66
1:A:950:U:H3	1:A:1231:G:H1	1.42	0.66
1:A:22:G:H1'	1:A:914:A:C6	2.30	0.66
1:A:597:G:N2	11:H:94:TYR:HE2	1.93	0.66
1:A:189:G:H1	1:A:190(J):U:H3	1.40	0.66
1:A:59:A:OP1	1:A:61:G:OP1	2.13	0.66
1:A:953:G:O3'	16:M:124:PRO:O	2.13	0.66
1:A:187:C:N3	23:T:105:SER:HB3	2.11	0.66
1:A:292:G:C5	1:A:293:G:H1'	2.30	0.66
1:A:1286:A:H61	1:A:1355:G:P	2.19	0.66
1:A:18:C:C2	1:A:918:A:C2	2.83	0.66
1:A:1205:U:O2'	6:C:195:VAL:HG23	1.95	0.66
1:A:958:A:O4'	22:S:55:LYS:NZ	2.24	0.66
13:J:51:ARG:HA	17:N:45:ARG:CZ	2.25	0.66
1:A:1236:A:H4'	1:A:1304:G:C4'	2.26	0.66
3:W:9:A:N1	3:W:45:G:C5	2.63	0.66
1:A:890:G:O2'	1:A:891:U:C6	2.47	0.66
1:A:22:G:H4'	1:A:885:G:C8	2.31	0.66
18:O:24:SER:O	18:O:28:GLN:HG2	1.95	0.66
19:P:7:ALA:H	19:P:18:ARG:H	1.42	0.66
8:E:81:GLU:HA	8:E:89:ILE:O	1.94	0.66
1:A:112:G:H5'	1:A:389:A:H4'	1.77	0.66
2:V:8:U:O2	2:V:48:C:H1'	1.96	0.66
1:A:1004:A:C2'	1:A:1036:G:O6	2.38	0.66
1:A:1240:U:C4	10:G:30:ILE:HG23	2.31	0.66
5:B:101:MET:HA	5:B:108:ILE:HG13	1.78	0.66
1:A:1004:A:O2'	1:A:1037:C:O2	2.14	0.66
1:A:944:G:O6	1:A:1337:G:H2'	1.95	0.66
11:H:27:PRO:O	11:H:32:LYS:HD2	1.95	0.66
1:A:1348:U:OP1	12:I:109:VAL:HA	1.96	0.66
2:V:66:A:H2'	2:V:67:A:H8	1.59	0.66
1:A:760:G:N1	20:Q:104:LYS:O	2.29	0.66
1:A:949:A:H4'	1:A:1364:U:H3	1.61	0.66
1:A:578:C:O2'	1:A:729:A:O4'	2.13	0.66

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
6:C:7:PRO:O	6:C:11:ARG:HB2	1.95	0.66
15:L:102:ARG:HB3	15:L:109:GLY:HA2	1.78	0.66
1:A:946:A:O2'	1:A:1333:A:C2'	2.43	0.66
1:A:1347:G:N2	1:A:1373:G:H2'	2.10	0.65
1:A:938:A:H5''	10:G:95:ARG:HH22	1.62	0.65
1:A:551:U:H5'	15:L:119:LYS:CE	2.23	0.65
1:A:1291:G:H5'	12:I:40:LEU:HD23	1.76	0.65
8:E:152:ARG:HH11	11:H:43:GLY:HA3	1.60	0.65
1:A:985:C:H2'	1:A:986:A:H8	1.61	0.65
7:D:15:GLU:OE2	7:D:66:ARG:NH1	2.27	0.65
1:A:407:G:H8	1:A:407:G:O5'	1.79	0.65
8:E:29:GLY:HA2	8:E:46:GLY:O	1.97	0.65
21:R:70:ILE:O	21:R:74:ARG:HD2	1.96	0.65
14:K:110:ASP:HB3	21:R:85:LEU:HB3	1.77	0.65
6:C:38:ARG:HB3	6:C:94:LEU:HD21	1.78	0.65
7:D:173:TRP:CG	7:D:189:PRO:HB3	2.31	0.65
2:V:43:G:H2'	2:V:44:A:H8	1.60	0.65
1:A:789:U:O2	1:A:792:A:H8	1.77	0.65
20:Q:22:LEU:CD1	20:Q:23:VAL:O	2.41	0.65
1:A:720:C:C5	1:A:721:G:H2'	2.30	0.65
1:A:406:G:H4'	7:D:5:ILE:HD13	1.77	0.65
1:A:1156:G:O3'	1:A:1157:A:P	2.53	0.65
6:C:50:ALA:HB1	6:C:70:VAL:HG11	1.78	0.65
1:A:691:G:H1	14:K:52:GLY:HA2	1.62	0.65
1:A:1220:G:H21	22:S:54:GLY:CA	2.10	0.65
3:W:37:YYG:H101	10:G:83:ALA:CB	2.12	0.65
1:A:1236:A:H4'	1:A:1304:G:C5'	2.27	0.65
1:A:509:A:C8	7:D:54:TYR:HE2	2.11	0.65
1:A:1053:G:H5''	1:A:1053:G:H8	1.61	0.65
1:A:194:C:O2'	23:T:68:LYS:HD3	1.97	0.65
1:A:1226:C:N4	16:M:104:ARG:HG3	2.11	0.65
1:A:1205:U:H4'	6:C:195:VAL:HG23	1.78	0.65
2:V:47:U:H1'	2:V:50:U:OP1	1.97	0.65
3:W:25:C:C2	3:W:26:G:C1'	2.79	0.65
1:A:1373:G:H5''	12:I:42:ARG:HH21	1.61	0.65
1:A:815:A:OP2	1:A:816:A:H8	1.80	0.65
2:V:14:A:H2'	2:V:15:G:C8	2.31	0.65
1:A:1353:G:OP1	24:U:10:ARG:NH2	2.30	0.65
1:A:1400:C:C5	2:V:34:G:C6	2.85	0.65
1:A:986:A:C2	22:S:52:TYR:HE2	2.14	0.65
1:A:1229:A:O2'	16:M:125:ARG:NH1	2.30	0.65
13:J:38:ILE:HG13	13:J:38:ILE:O	1.97	0.65

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
3:W:14:A:C6	3:W:22:G:C2	2.85	0.65
1:A:451:A:H61	1:A:480:U:H2'	1.62	0.65
1:A:369:C:H42	1:A:392:G:H1	1.44	0.65
1:A:1236:A:H5'	1:A:1304:G:H5''	1.78	0.64
1:A:575:G:N2	1:A:880:C:O2	2.30	0.64
1:A:1005:A:H5'	1:A:1037:C:C2	2.32	0.64
1:A:280:C:O2	20:Q:38:ARG:HG3	1.95	0.64
1:A:1156:G:N3	1:A:1179:A:N1	2.44	0.64
1:A:938:A:C5'	10:G:95:ARG:HH22	2.11	0.64
1:A:713:G:H2'	1:A:714:G:C8	2.33	0.64
1:A:948:C:O5'	1:A:948:C:H6	1.80	0.64
21:R:74:ARG:HG2	21:R:81:PHE:HB3	1.78	0.64
6:C:157:ILE:HD12	6:C:164:ARG:HG3	1.79	0.64
1:A:926:G:C2	4:X:116:U:P	2.90	0.64
1:A:1061:G:H1'	13:J:56:HIS:HE1	1.61	0.64
6:C:29:TYR:HE2	17:N:54:PRO:HG2	1.62	0.64
7:D:12:CYS:HB3	7:D:31:CYS:O	1.96	0.64
13:J:64:GLU:CB	17:N:59:ALA:HB2	2.25	0.64
7:D:98:GLU:O	7:D:99:SER:C	2.29	0.64
1:A:393:A:OP2	19:P:12:LYS:HD3	1.98	0.64
1:A:1060:C:H2'	1:A:1061:G:H8	1.63	0.64
6:C:5:ILE:HG23	13:J:51:ARG:HH22	1.62	0.64
16:M:91:ARG:HH22	16:M:103:THR:CG2	2.09	0.64
3:W:37:YYG:H15	10:G:84:ASN:O	1.93	0.64
14:K:18:ARG:HH21	14:K:37:GLY:HA2	1.62	0.64
1:A:1024:G:O3'	1:A:1025:U:H4'	1.96	0.64
1:A:1339:A:O2'	2:V:40:C:O2	2.16	0.64
1:A:1182:G:H4'	1:A:1183:A:H5''	1.78	0.64
15:L:70:ILE:HG12	15:L:100:ILE:HD11	1.79	0.64
16:M:92:HIS:CE1	16:M:110:ARG:CZ	2.80	0.64
1:A:436:C:C2	1:A:437:U:N3	2.65	0.64
1:A:674:G:H2'	1:A:675:A:C8	2.31	0.64
1:A:568:G:N3	1:A:574:A:H2	1.95	0.64
1:A:265:G:O2'	20:Q:66:SER:HA	1.97	0.64
21:R:46:GLU:HB3	21:R:85:LEU:HD13	1.78	0.64
1:A:1367:C:OP1	12:I:115:GLY:N	2.31	0.64
1:A:801:U:H2'	1:A:802:A:H8	1.62	0.64
3:W:23:A:OP2	3:W:45:G:O6	2.16	0.64
1:A:522:C:H2'	1:A:523:A:H8	1.62	0.64
1:A:1014:A:N3	22:S:34:TRP:CE3	2.66	0.64
6:C:91:LEU:HD11	6:C:99:VAL:CG2	2.22	0.64
12:I:103:THR:HG22	12:I:105:ASP:H	1.63	0.64

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
7:D:185:PHE:CE2	7:D:189:PRO:HD3	2.32	0.64
14:K:99:GLN:HG2	14:K:105:VAL:HG11	1.78	0.64
1:A:1198:G:O2'	13:J:54:PHE:CE2	2.28	0.64
1:A:65:U:H4'	1:A:66:G:H5'	1.78	0.64
1:A:404:U:H5'	7:D:122:ARG:HD2	1.79	0.64
1:A:1308:U:H5''	16:M:110:ARG:HH22	1.57	0.63
1:A:940:C:H2'	1:A:941:G:C8	2.33	0.63
1:A:450:G:H21	19:P:13:HIS:CE1	2.16	0.63
1:A:1225:A:OP2	16:M:104:ARG:HB2	1.96	0.63
11:H:91:ARG:HG3	20:Q:32:TYR:O	1.98	0.63
1:A:1376:U:C5'	10:G:94:ARG:HH22	2.12	0.63
16:M:15:VAL:O	16:M:19:LEU:HG	1.98	0.63
1:A:985:C:H2'	1:A:986:A:C8	2.32	0.63
1:A:1059:C:O2'	13:J:53:PRO:HD2	1.98	0.63
1:A:1199:U:H4'	13:J:54:PHE:CZ	2.33	0.63
1:A:1315:U:OP2	22:S:6:LYS:CE	2.46	0.63
1:A:429:U:OP2	7:D:13:ARG:NE	2.32	0.63
1:A:1287:A:N6	1:A:1371:G:C4'	2.59	0.63
1:A:600:C:H4'	11:H:128:GLY:O	1.98	0.63
1:A:1347:G:H3'	12:I:108:VAL:CA	2.27	0.63
1:A:1025:U:H2'	1:A:1026:G:C8	2.33	0.63
1:A:450:G:H4'	19:P:42:ARG:HG2	1.79	0.63
2:V:57:G:H2'	2:V:58:A:H5''	1.80	0.63
14:K:61:ALA:HB1	14:K:94:ALA:HB2	1.81	0.63
1:A:1308:U:H3'	16:M:99:ARG:HH12	1.63	0.63
3:W:1:G:N2	3:W:2:C:C4	2.61	0.63
1:A:946:A:O2'	1:A:1333:A:H1'	1.99	0.63
3:W:9:A:C6	3:W:45:G:C2	2.87	0.63
1:A:255:G:H1'	20:Q:16:GLN:HE21	1.63	0.63
1:A:971:G:C5	1:A:1365:G:H5'	2.34	0.63
1:A:20:U:C2	1:A:916:G:C2	2.87	0.63
1:A:813:U:OP1	1:A:904:C:C5'	2.46	0.63
1:A:789:U:O2	1:A:792:A:C8	2.51	0.63
5:B:103:THR:O	5:B:104:ASN:HB2	1.99	0.63
7:D:10:ARG:O	7:D:13:ARG:HB2	1.99	0.63
8:E:17:ALA:HA	8:E:26:PHE:HB3	1.78	0.63
1:A:17:U:C2	1:A:919:A:C2	2.86	0.63
1:A:509:A:H8	7:D:54:TYR:CE2	2.15	0.63
1:A:1418:A:H8	1:A:1419:G:O4'	1.79	0.63
1:A:587:G:OP1	11:H:92:ARG:NH2	2.32	0.63
1:A:1285:A:H4'	1:A:1286:A:O5'	1.98	0.63
1:A:1360:A:C8	17:N:18:VAL:HG12	2.34	0.62

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:299:G:H2'	1:A:300:A:C8	2.34	0.62
1:A:173:U:H4'	1:A:197:A:H5'	1.80	0.62
1:A:25:C:H4'	1:A:524:G:C2	2.34	0.62
1:A:398:C:H2'	1:A:399:G:C8	2.34	0.62
1:A:1095:U:OP1	1:A:1108:G:N2	2.31	0.62
1:A:1498:U:H1'	1:A:1499:A:N7	2.14	0.62
2:V:61:C:H2'	2:V:62:A:H8	1.64	0.62
1:A:1358:U:OP1	17:N:34:TYR:CA	2.47	0.62
13:J:11:PHE:CZ	17:N:55:GLY:HA3	2.34	0.62
1:A:940:C:H2'	1:A:941:G:H8	1.64	0.62
1:A:1286:A:H1'	24:U:22:ARG:HH21	1.63	0.62
1:A:18:C:N3	1:A:917:G:N2	2.42	0.62
15:L:54:LYS:HG2	15:L:75:HIS:CE1	2.34	0.62
1:A:1210:C:H4'	1:A:1214:C:H42	1.65	0.62
6:C:29:TYR:CE2	17:N:54:PRO:HG2	2.34	0.62
17:N:24:CYS:HB2	17:N:39:LEU:HA	1.81	0.62
3:W:44:A:O2'	3:W:45:G:H5'	2.00	0.62
1:A:764:C:C2'	1:A:765:G:H8	2.03	0.62
13:J:61:GLU:OE1	17:N:49:HIS:CE1	2.47	0.62
1:A:562:C:H1'	15:L:15:ARG:CD	2.30	0.62
1:A:1528:U:H2'	1:A:1530:G:H5'	1.81	0.62
1:A:436:C:C2'	1:A:437:U:O4'	2.47	0.62
1:A:403:C:H42	1:A:547:A:H5'	1.64	0.62
1:A:1193:G:O2'	8:E:25:ARG:NH2	2.33	0.62
18:O:36:ILE:HD11	18:O:60:VAL:HG22	1.81	0.62
10:G:71:PRO:HG2	10:G:91:VAL:HG11	1.82	0.62
1:A:60:A:C6	1:A:107:G:O2'	2.49	0.62
23:T:23:ARG:HA	23:T:26:ASN:HD21	1.64	0.62
3:W:37:YYG:H101	3:W:37:YYG:C21	2.30	0.62
7:D:23:GLY:N	7:D:113:SER:HB3	2.15	0.62
1:A:323:U:H3	1:A:327:A:H62	1.45	0.62
10:G:111:ARG:HD2	10:G:123:GLU:HB2	1.81	0.62
1:A:965:A:O2'	1:A:966:G:C5'	2.47	0.62
3:W:72:C:H2'	3:W:73:A:H8	1.64	0.62
2:V:7:U:H5'	2:V:8:U:P	2.39	0.62
3:W:40:C:H2'	3:W:41:U:H5'	1.82	0.62
1:A:261:U:C5	23:T:79:ARG:CZ	2.83	0.62
1:A:20:U:H1'	1:A:572:A:C4	2.35	0.62
20:Q:67:LYS:O	20:Q:68:ARG:CB	2.46	0.62
14:K:99:GLN:HA	14:K:105:VAL:HG21	1.82	0.62
1:A:829:G:O2'	5:B:26:PRO:HG2	1.99	0.62
1:A:1400:C:N3	2:V:34:G:N2	2.46	0.62

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:1197:G:H2'	1:A:1198:G:H5'	1.80	0.62
1:A:1224:G:H4'	16:M:102:ARG:HH11	1.65	0.62
6:C:12:LEU:CD1	17:N:51:GLY:HA3	2.30	0.62
1:A:120:A:H3'	1:A:120:A:C8	2.35	0.62
1:A:940:C:OP2	10:G:102:ARG:HD3	2.00	0.62
1:A:426:G:H1'	7:D:42:GLN:HG3	1.81	0.62
1:A:1314:C:H3'	22:S:6:LYS:CD	2.27	0.61
1:A:1287:A:H61	1:A:1371:G:H4'	1.62	0.61
7:D:23:GLY:HA2	7:D:112:VAL:C	2.20	0.61
8:E:79:GLU:HG3	8:E:93:PRO:HD2	1.82	0.61
1:A:671:G:H5'	9:F:77:ARG:NH2	2.07	0.61
1:A:1091:U:OP1	1:A:1172:C:H4'	2.00	0.61
14:K:65:ALA:HB1	14:K:98:LEU:HG	1.81	0.61
6:C:12:LEU:CD1	17:N:51:GLY:CA	2.78	0.61
1:A:1291:G:OP1	10:G:37:ASN:ND2	2.33	0.61
1:A:361(A):C:O3'	1:A:1362:C:H5''	1.99	0.61
1:A:15:G:H4'	8:E:24:ARG:HH22	1.64	0.61
15:L:54:LYS:HG3	15:L:75:HIS:HE1	1.65	0.61
3:W:72:C:H2'	3:W:73:A:O4'	1.99	0.61
1:A:1248:A:C2'	12:I:70:LYS:HZ1	2.12	0.61
7:D:70:ILE:CD1	7:D:100:ARG:CZ	2.77	0.61
12:I:32:ASP:HB3	12:I:35:GLU:HB2	1.83	0.61
1:A:595:G:H2'	1:A:641:U:O4	2.01	0.61
1:A:741:G:O2'	18:O:55:GLY:HA3	2.00	0.61
1:A:1004:A:O2'	1:A:1037:C:C2	2.54	0.61
1:A:979:C:OP1	1:A:1222:G:C6	2.53	0.61
7:D:78:LEU:HD21	7:D:139:ARG:NH2	2.15	0.61
1:A:949:A:C4'	1:A:1364:U:H3	2.13	0.61
16:M:24:GLY:O	16:M:29:ARG:HD2	2.01	0.61
7:D:88:VAL:HG13	8:E:97:GLY:HA3	1.82	0.61
1:A:1220:G:H21	22:S:54:GLY:HA2	1.66	0.61
1:A:958:A:C4	22:S:55:LYS:CD	2.73	0.61
3:W:37:YYG:C19	10:G:78:ARG:O	2.48	0.61
1:A:665:A:H1'	1:A:733:A:H1'	1.83	0.61
1:A:1237:C:H3'	1:A:1238:A:P	2.40	0.61
1:A:579:G:O4'	1:A:728:A:N3	2.33	0.61
2:V:10:G:O6	2:V:26:G:C4	2.53	0.61
1:A:1494:G:P	25:Y:117:GLY:CA	2.89	0.61
1:A:1377:A:P	10:G:94:ARG:NH2	2.74	0.61
15:L:54:LYS:HG2	15:L:75:HIS:HE1	1.65	0.61
15:L:37:CYS:O	15:L:79:GLU:HA	2.01	0.61
18:O:3:ILE:HG21	18:O:34:LEU:HD21	1.83	0.61

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:1061:G:O4'	13:J:56:HIS:CE1	2.54	0.61
9:F:69:GLU:O	9:F:72:VAL:HG23	2.01	0.61
1:A:357:G:H1'	1:A:368:U:O2	2.01	0.61
5:B:102:LEU:HD23	5:B:177:ALA:HB2	1.83	0.61
1:A:1060:C:H4'	13:J:52:GLY:N	2.15	0.61
7:D:98:GLU:CD	7:D:103:ASN:HD21	2.04	0.61
7:D:173:TRP:CD2	7:D:189:PRO:HB3	2.35	0.61
8:E:11:ILE:HD11	8:E:108:ALA:HB2	1.83	0.61
1:A:1400:C:C5	2:V:34:G:C2	2.89	0.61
1:A:405:U:O4	7:D:2:GLY:CA	2.48	0.61
1:A:585:G:O2'	1:A:879:C:C5'	2.43	0.61
9:F:49:ALA:HB2	21:R:78:LEU:O	1.99	0.61
23:T:87:LYS:O	23:T:91:LEU:HG	2.01	0.61
16:M:93:ARG:C	16:M:95:GLY:N	2.51	0.60
7:D:18:LYS:HA	7:D:33:MET:CE	2.31	0.60
1:A:20:U:C2	1:A:916:G:N2	2.69	0.60
14:K:58:PRO:HA	14:K:90:GLY:HA3	1.82	0.60
9:F:23:LYS:HA	9:F:26:ILE:HD12	1.83	0.60
1:A:976:G:O5'	1:A:1358:U:O2'	2.18	0.60
16:M:87:TYR:HE1	22:S:75:ALA:O	1.84	0.60
3:W:37:YYG:H141	10:G:84:ASN:ND2	2.15	0.60
1:A:126:G:H4'	1:A:634:C:H1'	1.81	0.60
1:A:1318:A:C4'	22:S:10:PHE:CD2	2.83	0.60
1:A:1403:C:H1'	1:A:1500:A:N1	2.17	0.60
7:D:24:GLU:O	7:D:27:TYR:HB2	2.02	0.60
8:E:152:ARG:NH1	11:H:42:GLU:O	2.34	0.60
1:A:627:G:H2'	1:A:628:G:H8	1.65	0.60
14:K:40:ILE:HG23	14:K:75:TYR:HD2	1.66	0.60
10:G:66:VAL:HG12	10:G:70:LYS:HE2	1.84	0.60
1:A:1287:A:N6	1:A:1371:G:H4'	2.15	0.60
1:A:64:G:H4'	1:A:65:U:H5''	1.82	0.60
1:A:939:G:C5'	10:G:102:ARG:HH22	2.12	0.60
2:V:20:G:H2'	2:V:20:G:N3	2.15	0.60
1:A:801:U:H2'	1:A:802:A:C8	2.37	0.60
1:A:1342:C:H2'	1:A:1343:G:H8	1.66	0.60
1:A:92:C:H2'	1:A:93:G:H8	1.66	0.60
6:C:18:TRP:CD1	17:N:54:PRO:HA	2.36	0.60
7:D:22:LYS:HA	7:D:115:ARG:NH2	2.15	0.60
1:A:376:G:H5''	19:P:5:ARG:CD	2.27	0.60
1:A:113:G:H21	1:A:353:A:H2'	1.66	0.60
8:E:39:GLY:HA2	8:E:69:VAL:HB	1.84	0.60
3:W:25:C:C1'	3:W:26:G:C8	2.85	0.60

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:47:C:H4'	1:A:48:C:H5'	1.84	0.60
1:A:983:A:H1'	1:A:1049:U:O2	2.02	0.60
1:A:1490:C:H5''	1:A:1490:C:H6	1.67	0.60
1:A:880:C:OP2	15:L:8:ASN:HB2	2.01	0.60
1:A:1254:C:OP1	13:J:45:ARG:HD2	2.01	0.60
1:A:429:U:H5'	7:D:32:ALA:HB2	1.84	0.60
16:M:19:LEU:HD13	16:M:25:ILE:HG21	1.82	0.60
1:A:755:G:H2'	1:A:756:C:C6	2.36	0.60
1:A:1156:G:C3'	1:A:1157:A:P	2.90	0.60
1:A:290:C:H6	1:A:290:C:O5'	1.84	0.60
7:D:55:ALA:O	7:D:59:ARG:HG2	2.02	0.59
1:A:25:C:H4'	1:A:524:G:N3	2.17	0.59
1:A:509:A:C8	7:D:54:TYR:CE2	2.90	0.59
1:A:529:G:C5	15:L:49:ASN:ND2	2.70	0.59
1:A:1216:G:OP1	17:N:5:ALA:CB	2.50	0.59
1:A:1441:G:H1'	1:A:1461:G:H22	1.67	0.59
1:A:454:C:H3'	1:A:455:C:H6	1.67	0.59
6:C:23:TYR:HD2	6:C:24:ALA:N	2.00	0.59
5:B:91:PRO:HG3	5:B:155:LEU:H	1.66	0.59
1:A:689:C:H6	1:A:689:C:O5'	1.85	0.59
1:A:1224:G:C6	1:A:1322:C:H4'	2.37	0.59
1:A:1374:A:H1'	10:G:31:MET:SD	2.42	0.59
1:A:1189:C:O2'	6:C:176:HIS:HD2	1.84	0.59
1:A:1148:U:H2'	1:A:1149:C:O4'	2.01	0.59
1:A:375:U:H6	1:A:375:U:O5'	1.85	0.59
1:A:324:G:N2	1:A:327:A:C8	2.70	0.59
21:R:36:ASN:HB3	21:R:40:LEU:HG	1.83	0.59
1:A:532:A:N6	6:C:159:GLY:O	2.35	0.59
1:A:62:U:H5''	1:A:385:C:O2'	2.02	0.59
12:I:78:LYS:HD3	12:I:101:PHE:HE2	1.66	0.59
1:A:1318:A:C5'	22:S:10:PHE:CD2	2.85	0.59
3:W:40:C:H4'	10:G:147:ALA:HB1	1.83	0.59
10:G:102:ARG:HG2	10:G:106:GLN:HE22	1.67	0.59
1:A:1224:G:C8	1:A:1322:C:OP1	2.55	0.59
1:A:946:A:O2'	1:A:1333:A:C1'	2.50	0.59
3:W:72:C:C2'	3:W:73:A:O5'	2.49	0.59
1:A:1095:U:H5'	1:A:1109:C:C2	2.36	0.59
1:A:624:C:H4'	19:P:10:GLY:HA2	1.83	0.59
13:J:50:ILE:HD12	17:N:41:ARG:HD2	1.83	0.59
8:E:28:PHE:N	8:E:28:PHE:CD1	2.69	0.59
1:A:1060:C:H2'	1:A:1061:G:C8	2.37	0.59
7:D:12:CYS:HB2	7:D:31:CYS:O	2.03	0.59

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
2:V:43:G:H2'	2:V:44:A:C8	2.37	0.59
1:A:1192:C:C6	1:A:1192:C:H3'	2.37	0.59
13:J:64:GLU:HB3	17:N:59:ALA:CB	2.30	0.59
3:W:41:U:H2'	3:W:42:G:O4'	2.03	0.59
13:J:16:LEU:HB3	13:J:70:ARG:HE	1.67	0.59
1:A:667:G:O2'	18:O:49:ASP:OD1	2.18	0.59
20:Q:5:VAL:HA	20:Q:59:ILE:O	2.03	0.59
1:A:380:G:N2	1:A:382:A:H3'	2.18	0.59
5:B:17:PHE:HD1	5:B:18:GLY:N	2.00	0.59
1:A:1320:C:C4'	22:S:73:GLU:HG2	2.32	0.59
1:A:397:A:N6	1:A:548:G:C5	2.71	0.59
1:A:130:A:C8	20:Q:63:ARG:HG3	2.37	0.59
2:V:10:G:O6	2:V:26:G:C5	2.56	0.59
1:A:758:G:O5'	1:A:758:G:H8	1.85	0.59
22:S:55:LYS:HE2	22:S:56:GLN:HE21	1.66	0.59
1:A:1095:U:O5'	1:A:1095:U:H6	1.86	0.59
1:A:1521:G:H2'	1:A:1522:U:C6	2.38	0.59
1:A:776:G:N2	1:A:802:A:OP2	2.36	0.59
1:A:522:C:H2'	1:A:523:A:C8	2.38	0.59
7:D:30:LYS:C	7:D:32:ALA:H	2.07	0.59
1:A:173:U:C6	1:A:198:G:H1'	2.38	0.59
3:W:9:A:C5	3:W:45:G:C2	2.91	0.59
1:A:19:C:O2	1:A:917:G:C2	2.55	0.59
1:A:17:U:H3	1:A:918:A:H61	1.50	0.59
1:A:1291:G:C5'	12:I:40:LEU:HD23	2.32	0.59
15:L:54:LYS:HB3	15:L:70:ILE:HB	1.85	0.59
23:T:72:LEU:HB3	23:T:77:ALA:HB2	1.83	0.59
7:D:201:GLN:O	7:D:205:GLU:HG2	2.03	0.59
6:C:180:ALA:HB1	6:C:203:PHE:HE1	1.66	0.59
2:V:34:G:C3'	2:V:35:A:C5'	2.80	0.59
1:A:988:G:O2'	1:A:1015:A:C6	2.55	0.59
1:A:1309:G:H5''	16:M:88:ARG:NH1	2.18	0.59
1:A:436:C:C2	1:A:437:U:C4	2.91	0.59
7:D:3:ARG:HG3	7:D:118:ARG:NH1	2.16	0.59
1:A:761:G:H2'	1:A:762:C:C6	2.38	0.59
1:A:1286:A:C6	1:A:1354:C:H5''	2.38	0.59
1:A:18:C:N4	1:A:917:G:H1	2.01	0.59
11:H:29:SER:HB2	11:H:32:LYS:HZ1	1.68	0.59
1:A:932:C:H4'	10:G:4:ARG:NH2	2.18	0.59
5:B:69:LEU:HB2	5:B:159:PRO:HB2	1.84	0.59
1:A:545:C:H5''	7:D:72:GLU:HG2	1.84	0.59
1:A:1309:G:OP2	16:M:99:ARG:NH1	2.36	0.58

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:947:G:H4'	1:A:1332:A:C2	2.32	0.58
1:A:298:A:H3'	1:A:299:G:H8	1.68	0.58
1:A:587:G:C3'	1:A:588:G:P	2.91	0.58
1:A:1249:C:O3'	12:I:66:ARG:HG2	2.02	0.58
1:A:1084:G:H2'	1:A:1085:U:C6	2.37	0.58
1:A:1221:G:O3'	22:S:77:THR:HG21	2.03	0.58
1:A:953:G:C2'	16:M:125:ARG:HA	2.30	0.58
1:A:121:C:H4'	1:A:122:G:N7	2.19	0.58
7:D:106:TYR:HA	7:D:111:ALA:HB3	1.85	0.58
1:A:900:A:H2'	1:A:901:A:H8	1.68	0.58
1:A:975:A:N7	1:A:1357:A:C2	2.61	0.58
1:A:173:U:C4'	1:A:197:A:H5'	2.33	0.58
20:Q:57:VAL:HG12	20:Q:76:LEU:HA	1.84	0.58
1:A:736:C:OP1	21:R:72:ARG:NH2	2.36	0.58
1:A:1468:A:H2'	1:A:1469:G:O4'	2.03	0.58
7:D:157:LEU:HD23	7:D:160:GLN:HG3	1.84	0.58
1:A:977:A:H2'	1:A:977:A:N3	2.18	0.58
17:N:40:CYS:N	17:N:43:CYS:SG	2.77	0.58
1:A:576:G:C8	1:A:881:G:H1'	2.38	0.58
1:A:54:C:H41	1:A:352:C:H2'	1.68	0.58
1:A:1418:A:C8	1:A:1419:G:H1'	2.38	0.58
14:K:12:ARG:NH1	14:K:40:ILE:HA	2.18	0.58
7:D:102:ASP:HB3	7:D:136:PRO:HB3	1.84	0.58
5:B:28:PHE:CZ	5:B:42:ILE:HD11	2.39	0.58
15:L:82:VAL:O	15:L:83:VAL:HB	2.01	0.58
7:D:29:PRO:HB3	7:D:34:GLU:HG2	1.85	0.58
1:A:1060:C:H5''	13:J:51:ARG:HD3	1.84	0.58
1:A:565:U:H3'	1:A:566:G:C8	2.38	0.58
1:A:1342:C:H2'	1:A:1343:G:C8	2.37	0.58
16:M:94:ARG:HB2	16:M:96:LEU:CD2	2.34	0.58
1:A:1097:C:H5'	1:A:1169:A:H4'	1.85	0.58
1:A:939:G:OP1	10:G:102:ARG:NH1	2.36	0.58
14:K:79:SER:HA	14:K:104:GLN:HB3	1.85	0.58
19:P:22:THR:HA	19:P:33:ILE:HG13	1.84	0.58
1:A:436:C:H2'	1:A:437:U:C1'	2.33	0.58
1:A:668:G:H4'	18:O:48:LYS:O	2.03	0.58
15:L:82:VAL:O	15:L:106:ASP:HB2	2.03	0.58
1:A:790:A:H5'	2:V:38:A:O2'	2.04	0.58
7:D:23:GLY:HA2	7:D:113:SER:CB	2.34	0.58
7:D:10:ARG:HG2	7:D:40:PRO:HG3	1.84	0.58
1:A:39:G:C8	1:A:498:U:C4	2.92	0.58
1:A:1134:G:H1	1:A:1140:C:H42	1.52	0.58

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:976:G:C5'	1:A:1358:U:HO2'	2.16	0.58
7:D:18:LYS:HA	7:D:33:MET:HE1	1.86	0.58
1:A:1339:A:H2	2:V:31:A:O4'	1.86	0.58
1:A:886:G:H22	1:A:912:C:H1'	1.67	0.58
1:A:1320:C:O4'	22:S:73:GLU:CG	2.47	0.58
1:A:560:U:H5'	1:A:566:G:N2	2.18	0.58
1:A:567:G:O6	15:L:15:ARG:NH2	2.37	0.58
1:A:405:U:C3'	1:A:406:G:P	2.92	0.58
3:W:40:C:H4'	10:G:147:ALA:CB	2.34	0.58
1:A:983:A:HO2'	1:A:1049:U:HO2'	1.48	0.58
1:A:578:C:H4'	1:A:729:A:C4'	2.34	0.58
18:O:45:VAL:O	18:O:46:HIS:CB	2.52	0.58
11:H:18:ARG:HG3	11:H:18:ARG:NH1	2.13	0.58
1:A:523:A:C2	15:L:91:LYS:HB3	2.39	0.58
1:A:575:G:OP1	1:A:575:G:H4'	2.03	0.57
1:A:60:A:H61	1:A:107:G:C2'	2.13	0.57
3:W:41:U:C5'	3:W:41:U:H6	2.13	0.57
1:A:426:G:C1'	7:D:42:GLN:HA	2.34	0.57
5:B:93:VAL:HG21	5:B:97:TRP:HD1	1.69	0.57
1:A:989:C:H4'	1:A:1016:A:C2	2.39	0.57
1:A:1059:C:H2'	13:J:52:GLY:CA	2.33	0.57
1:A:1236:A:H4'	1:A:1304:G:H5''	1.86	0.57
3:W:39:PSU:C4'	14:K:54:ARG:NH2	2.44	0.57
1:A:667:G:H4'	18:O:51:HIS:ND1	2.19	0.57
1:A:1328:C:H5''	16:M:28:ALA:HB1	1.86	0.57
5:B:17:PHE:HD1	5:B:18:GLY:H	1.50	0.57
4:X:116:U:H2'	4:X:117:U:C6	2.39	0.57
1:A:976:G:P	1:A:1358:U:H1'	2.43	0.57
1:A:1030:C:N4	1:A:30(A):G:O6	2.38	0.57
13:J:11:PHE:CD2	17:N:55:GLY:CA	2.86	0.57
1:A:815:A:OP2	1:A:816:A:C8	2.57	0.57
3:W:41:U:H5'	3:W:41:U:C6	2.27	0.57
1:A:263:A:H5'	23:T:79:ARG:HD3	1.86	0.57
1:A:578:C:H4'	1:A:729:A:H4'	1.86	0.57
1:A:768:A:OP1	1:A:804:U:H5''	2.04	0.57
1:A:1307:U:H2'	1:A:1308:U:C6	2.38	0.57
1:A:1061:G:H1'	13:J:56:HIS:CE1	2.39	0.57
7:D:23:GLY:CA	7:D:113:SER:CB	2.80	0.57
1:A:15:G:C6	1:A:1396:A:C6	2.92	0.57
1:A:1060:C:C4'	13:J:51:ARG:HB3	2.33	0.57
1:A:1223:C:OP2	22:S:78:ARG:NH2	2.36	0.57
1:A:120:A:H3'	1:A:120:A:H8	1.68	0.57

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:110:C:O2'	19:P:25:ARG:O	2.23	0.57
7:D:3:ARG:HH22	7:D:74:GLN:NE2	2.01	0.57
3:W:9:A:C6	3:W:45:G:C6	2.92	0.57
1:A:939:G:P	10:G:102:ARG:NH1	2.68	0.57
7:D:70:ILE:HD12	7:D:100:ARG:CZ	2.34	0.57
1:A:570:G:H2'	1:A:571:U:C5	2.40	0.57
10:G:26:PHE:HB2	10:G:101:LEU:HD22	1.86	0.57
1:A:375:U:O3'	19:P:6:LEU:HD22	2.04	0.57
1:A:828:A:N6	1:A:858:G:O2'	2.37	0.57
1:A:664:G:H22	1:A:741:G:H1	1.53	0.57
11:H:96:GLY:HA2	11:H:130:GLY:HA3	1.87	0.57
1:A:1481:U:H2'	1:A:1482:G:C8	2.40	0.57
1:A:965:A:H1'	1:A:969:A:C8	2.39	0.57
1:A:1060:C:H5'	13:J:52:GLY:N	2.19	0.57
1:A:1402:C:H2'	1:A:1403:C:O4'	2.05	0.57
16:M:8:GLU:HG3	16:M:22:ILE:HG12	1.85	0.57
19:P:59:TRP:O	19:P:64:ALA:HB3	2.05	0.57
1:A:1060:C:H4'	13:J:51:ARG:HB3	1.85	0.57
3:W:30:G:N2	10:G:144:MET:SD	2.77	0.57
1:A:130:A:H5'	20:Q:63:ARG:HH21	1.68	0.57
19:P:7:ALA:O	19:P:17:TYR:HA	2.05	0.57
1:A:1298:C:C5	10:G:114:ARG:HB3	2.39	0.57
2:V:19:G:H5'	2:V:20:G:P	2.44	0.57
1:A:24:U:O2'	1:A:525:C:C1'	2.53	0.57
1:A:966:G:H2'	1:A:967:C:C6	2.40	0.57
1:A:1314:C:H6	22:S:6:LYS:HG2	1.66	0.57
1:A:946:A:H2'	1:A:947:G:H8	1.70	0.57
1:A:17:U:C2	1:A:919:A:H2	2.23	0.57
3:W:64:A:H2'	3:W:65:G:O4'	2.04	0.57
1:A:426:G:O2'	7:D:42:GLN:HA	2.05	0.57
1:A:187:C:H1'	23:T:104:LEU:HD23	1.87	0.57
7:D:101:LEU:HD13	7:D:138:TYR:CD2	2.40	0.57
1:A:59:A:H5''	1:A:60:A:H5'	1.87	0.57
3:W:44:A:H2'	3:W:45:G:O4'	2.04	0.57
1:A:728:A:N7	18:O:54:ARG:HD2	2.20	0.57
10:G:69:VAL:HA	10:G:138:LYS:HD2	1.86	0.57
7:D:170:VAL:HG12	7:D:171:GLY:H	1.70	0.57
1:A:1219:U:OP2	17:N:19:ARG:NH1	2.34	0.57
1:A:826:C:O5'	1:A:826:C:H6	1.87	0.57
1:A:609:A:H2'	1:A:610:G:O4'	2.05	0.57
1:A:708:C:H4'	14:K:37:GLY:HA3	1.87	0.57
5:B:46:LYS:HE2	5:B:46:LYS:HA	1.86	0.57

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
2:V:8:U:H1'	2:V:48:C:H1'	1.87	0.56
1:A:878:G:OP1	11:H:88:LYS:HB3	2.04	0.56
2:V:9:A:C2	2:V:45:G:C5	2.93	0.56
18:O:63:ARG:HH12	18:O:87:ILE:HG12	1.70	0.56
7:D:173:TRP:CZ3	7:D:193:ASP:O	2.58	0.56
1:A:677:U:H2'	1:A:678:U:C6	2.40	0.56
1:A:1192:C:H6	1:A:1192:C:H3'	1.70	0.56
1:A:968:A:H5''	1:A:969:A:OP2	2.05	0.56
1:A:1061:G:H5'	13:J:59:SER:HG	1.69	0.56
5:B:112:VAL:CA	5:B:113:HIS:N	2.67	0.56
3:W:40:C:C4'	10:G:147:ALA:HB1	2.35	0.56
1:A:1405:G:O4'	1:A:1519:A:H4'	2.05	0.56
1:A:908:A:H2'	1:A:909:A:H8	1.69	0.56
5:B:164:VAL:HG21	5:B:170:GLU:CB	2.35	0.56
20:Q:87:LYS:O	20:Q:91:ARG:CB	2.52	0.56
1:A:1323:G:H2'	1:A:1324:A:C8	2.39	0.56
1:A:988:G:C4'	1:A:1014:A:H61	1.99	0.56
1:A:406:G:C5'	7:D:5:ILE:HG21	2.34	0.56
1:A:573:A:H2'	1:A:574:A:C8	2.40	0.56
1:A:1061:G:C1'	13:J:56:HIS:CE1	2.87	0.56
1:A:1317:C:C6	17:N:16:PHE:CD2	2.94	0.56
1:A:1347:G:H22	1:A:1373:G:C2'	2.16	0.56
1:A:116:A:H61	1:A:313:A:C1'	2.17	0.56
8:E:105:VAL:HB	8:E:106:PRO:HD3	1.86	0.56
1:A:1222:G:H5'	22:S:77:THR:HG21	1.87	0.56
1:A:397:A:C6	1:A:548:G:C5	2.94	0.56
1:A:18:C:N3	1:A:918:A:C2	2.74	0.56
1:A:579:G:H1'	1:A:728:A:C2	2.41	0.56
21:R:80:PRO:C	21:R:82:THR:H	2.08	0.56
25:Y:193:HIS:CA	25:Y:194:THR:CA	2.83	0.56
1:A:988:G:N3	1:A:1015:A:C2	2.74	0.56
1:A:1347:G:H5''	12:I:107:ARG:HA	1.87	0.56
1:A:946:A:C2	1:A:1333:A:H2	2.23	0.56
1:A:377:G:P	19:P:5:ARG:HH11	2.29	0.56
3:W:14:A:C6	3:W:22:G:N3	2.73	0.56
1:A:640:A:H2'	11:H:115:SER:OG	2.06	0.56
1:A:1382:C:O5'	1:A:1382:C:H6	1.88	0.56
1:A:1317:C:C4	17:N:16:PHE:CE1	2.94	0.56
1:A:977:A:C6	1:A:1224:G:OP1	2.57	0.56
1:A:1156:G:N2	1:A:1179:A:C2	2.70	0.56
14:K:44:SER:H	14:K:47:VAL:HB	1.70	0.56
1:A:436:C:C3'	1:A:437:U:C6	2.89	0.56

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
7:D:98:GLU:O	7:D:100:ARG:N	2.39	0.56
13:J:10:GLY:CA	13:J:16:LEU:HD21	2.28	0.56
1:A:29:G:O2'	1:A:295:C:H4'	2.06	0.56
1:A:1298:C:C4	10:G:114:ARG:HB3	2.41	0.56
1:A:191:G:N2	23:T:103:GLY:O	2.39	0.56
1:A:1418:A:C8	1:A:1419:G:C1'	2.89	0.56
1:A:818:G:O2'	1:A:820:U:C5	2.59	0.56
3:W:16:U:O2'	3:W:17:U:OP2	2.21	0.56
11:H:135:CYS:SG	11:H:136:GLU:N	2.78	0.56
1:A:1320:C:H1'	22:S:73:GLU:CG	2.29	0.56
1:A:958:A:N1	22:S:55:LYS:HB2	2.17	0.56
1:A:30(A):G:N1	1:A:1031:G:C6	2.74	0.56
1:A:59:A:H3'	1:A:60:A:C5'	2.36	0.56
20:Q:65:ILE:HG13	20:Q:69:LYS:O	2.04	0.56
7:D:140:VAL:CG1	7:D:144:ASP:HB2	2.35	0.56
4:X:121:G:N2	25:Y:192:ILE:CA	2.69	0.55
1:A:1014:A:C2	22:S:34:TRP:CZ3	2.95	0.55
5:B:145:LEU:HD13	5:B:149:LEU:HD12	1.87	0.55
1:A:761:G:H5''	20:Q:102:GLY:HA3	1.88	0.55
1:A:20:U:C4'	1:A:572:A:C6	2.90	0.55
1:A:127:G:P	1:A:635:G:H1'	2.46	0.55
1:A:627:G:H2'	1:A:628:G:C8	2.41	0.55
1:A:242:C:C2	1:A:285:G:N2	2.74	0.55
1:A:957:U:H4'	22:S:79:THR:HB	1.87	0.55
2:V:27:C:H2'	2:V:28:C:C6	2.41	0.55
2:V:34:G:H3'	2:V:35:A:C5'	2.36	0.55
6:C:5:ILE:HG21	13:J:61:GLU:OE2	2.07	0.55
7:D:31:CYS:HB3	7:D:33:MET:SD	2.46	0.55
1:A:579:G:C1'	1:A:728:A:N3	2.68	0.55
2:V:23:A:H2'	2:V:24:G:C8	2.40	0.55
12:I:55:ALA:HB3	12:I:58:ARG:NE	2.22	0.55
14:K:33:THR:HA	14:K:39:PRO:HA	1.88	0.55
22:S:40:ILE:HD13	22:S:62:ILE:HD13	1.88	0.55
16:M:94:ARG:C	16:M:95:GLY:C	2.64	0.55
2:V:7:U:H5'	2:V:8:U:OP2	2.05	0.55
1:A:564:C:H4'	11:H:91:ARG:NH2	2.20	0.55
2:V:41:U:H2'	2:V:41:U:O2	2.04	0.55
8:E:147:ASP:HA	8:E:150:ARG:HB2	1.89	0.55
1:A:738:C:H4'	9:F:70:ASP:HA	1.88	0.55
8:E:80:ILE:HD12	8:E:91:LEU:HB3	1.88	0.55
1:A:505:G:OP2	1:A:534:U:O2'	2.13	0.55
1:A:965:A:OP1	1:A:1198:G:H5''	2.06	0.55

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:173:U:H5'	1:A:197:A:C4'	2.36	0.55
1:A:22:G:O2'	1:A:913:A:C2	2.54	0.55
5:B:84:GLU:HG3	5:B:212:GLN:NE2	2.21	0.55
2:V:59:U:O2	2:V:59:U:C2'	2.55	0.55
1:A:988:G:N3	1:A:1015:A:H2	2.05	0.55
1:A:1235:U:OP1	24:U:3:LYS:HD3	2.06	0.55
1:A:1098:C:O4'	1:A:1167:A:H2	1.90	0.55
1:A:1376:U:O3'	10:G:94:ARG:NH2	2.39	0.55
1:A:62:U:H5''	1:A:385:C:C2'	2.36	0.55
1:A:1326:C:H5''	24:U:19:GLY:HA2	1.88	0.55
1:A:1030:C:N3	1:A:30(A):G:C6	2.75	0.55
7:D:20:TYR:C	7:D:22:LYS:H	2.10	0.55
1:A:1392:G:H21	1:A:1502:A:H8	1.55	0.55
3:W:29:A:O2'	3:W:30:G:H5'	2.06	0.55
1:A:501:C:OP2	15:L:124:LYS:HD3	2.06	0.55
13:J:7:LYS:HB3	13:J:97:GLU:HB2	1.89	0.55
16:M:44:ARG:HB3	16:M:46:LYS:HG2	1.88	0.55
1:A:390:C:O3'	19:P:28:ARG:NH2	2.40	0.55
1:A:1219:U:HO2'	22:S:34:TRP:HB3	1.61	0.55
1:A:1236:A:C5'	1:A:1304:G:H5''	2.37	0.55
7:D:26:CYS:O	7:D:31:CYS:HB2	2.06	0.55
1:A:188:C:H1'	23:T:105:SER:O	2.06	0.55
1:A:112:G:C5'	1:A:389:A:H4'	2.36	0.55
1:A:1451:A:H3'	1:A:1451:A:C8	2.41	0.55
2:V:34:G:H3'	2:V:35:A:H5''	1.88	0.55
1:A:1211:U:O3'	1:A:1212:U:O5'	1.95	0.55
1:A:922:G:H2'	1:A:923:A:C8	2.41	0.55
1:A:39:G:C8	1:A:547:A:C8	2.95	0.55
1:A:1259:C:H42	1:A:1276:G:H1	1.53	0.55
12:I:37:PHE:N	12:I:37:PHE:CD2	2.74	0.55
1:A:564:C:O2'	11:H:91:ARG:NH1	2.40	0.55
1:A:670:G:O2'	9:F:77:ARG:NH2	2.40	0.55
1:A:1250:A:C2	1:A:1370:G:O2'	2.54	0.55
1:A:1074:G:H2'	1:A:1075:C:O4'	2.07	0.55
1:A:1317:C:C5	17:N:16:PHE:CG	2.96	0.55
6:C:12:LEU:HD11	17:N:51:GLY:N	2.21	0.55
1:A:279:A:H4'	1:A:280:C:OP2	2.06	0.55
7:D:23:GLY:HA2	7:D:113:SER:CA	2.37	0.55
1:A:939:G:O2'	1:A:940:C:O4'	2.24	0.55
1:A:761:G:C5'	20:Q:102:GLY:HA3	2.37	0.55
1:A:294:U:H2'	1:A:295:C:C6	2.42	0.55
1:A:1091:U:H5'	1:A:1172:C:H5'	1.89	0.55

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
12:I:37:PHE:HD2	12:I:37:PHE:N	2.05	0.55
7:D:22:LYS:HG3	7:D:115:ARG:HH22	1.73	0.54
1:A:501:C:C6	1:A:501:C:H3'	2.42	0.54
1:A:20:U:C4	1:A:916:G:C2	2.96	0.54
1:A:1240:U:P	10:G:116:ALA:H	2.30	0.54
1:A:523:A:H2	15:L:91:LYS:HB3	1.73	0.54
15:L:37:CYS:HA	15:L:57:LYS:O	2.07	0.54
1:A:62:U:C5'	1:A:385:C:O2'	2.56	0.54
13:J:6:ILE:HG22	13:J:98:ILE:HG12	1.88	0.54
5:B:145:LEU:O	5:B:149:LEU:CB	2.47	0.54
1:A:1310:G:N7	22:S:2:PRO:HD3	2.22	0.54
1:A:1237:C:OP1	1:A:1303:C:O2'	2.14	0.54
1:A:1298:C:OP2	10:G:114:ARG:NH1	2.40	0.54
20:Q:67:LYS:HA	20:Q:70:ARG:NH2	2.22	0.54
19:P:8:ARG:NH1	19:P:11:SER:O	2.33	0.54
1:A:598:U:H4'	11:H:94:TYR:HB3	1.89	0.54
18:O:82:ILE:O	18:O:86:GLY:N	2.34	0.54
1:A:160:A:H2'	1:A:161:A:O4'	2.07	0.54
14:K:72:ALA:O	14:K:77:MET:HB2	2.07	0.54
9:F:76:ALA:HB1	9:F:80:ARG:HH21	1.71	0.54
1:A:749:C:O2	1:A:749:C:H2'	2.07	0.54
7:D:23:GLY:N	7:D:113:SER:CB	2.70	0.54
7:D:23:GLY:HA2	7:D:113:SER:N	2.22	0.54
13:J:64:GLU:CG	17:N:59:ALA:HA	2.32	0.54
1:A:397:A:C5	1:A:548:G:N7	2.75	0.54
8:E:7:GLU:HB3	8:E:112:LEU:HD11	1.88	0.54
23:T:41:VAL:O	23:T:45:GLN:HB2	2.07	0.54
11:H:111:ILE:HG22	11:H:134:ILE:HD12	1.89	0.54
1:A:1054:C:H1'	1:A:1196:U:C5	2.41	0.54
5:B:96:ARG:H	5:B:96:ARG:HD2	1.72	0.54
1:A:1127:G:H2'	1:A:1128:C:C6	2.42	0.54
1:A:1118:C:H1'	1:A:1179:A:N9	2.23	0.54
1:A:695:A:H2'	1:A:696:A:C8	2.42	0.54
1:A:760:G:N2	20:Q:94:ASN:OD1	2.41	0.54
1:A:971:G:O2'	1:A:1365:G:O2'	2.06	0.54
5:B:103:THR:O	5:B:104:ASN:CB	2.54	0.54
1:A:315:A:H1'	1:A:353:A:C2	2.42	0.54
8:E:15:ARG:HG2	8:E:28:PHE:CD2	2.43	0.54
5:B:18:GLY:HA3	5:B:41:ILE:HA	1.90	0.54
1:A:976:G:OP2	1:A:1358:U:H4'	2.06	0.54
1:A:975:A:N6	1:A:1367:C:O4'	2.41	0.54
3:W:72:C:H2'	3:W:73:A:C8	2.43	0.54

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
7:D:78:LEU:CD2	7:D:139:ARG:HH21	2.17	0.54
2:V:9:A:C2	2:V:45:G:N3	2.76	0.54
1:A:668:G:C5'	18:O:48:LYS:O	2.56	0.54
6:C:150:LYS:HE3	6:C:167:TRP:HE1	1.71	0.54
1:A:741:G:H5'	18:O:39:LEU:HD11	1.90	0.54
16:M:14:ARG:HA	16:M:44:ARG:HA	1.89	0.54
1:A:325:A:H2'	1:A:326:G:O4'	2.07	0.54
14:K:57:THR:HG23	14:K:60:ALA:H	1.73	0.54
19:P:4:ILE:HG12	19:P:21:VAL:HG13	1.88	0.54
1:A:1236:A:OP1	24:U:2:GLY:N	2.41	0.54
1:A:408:A:C5'	7:D:22:LYS:O	2.50	0.54
1:A:60:A:N3	1:A:107:G:N2	2.53	0.54
1:A:110:C:O2'	19:P:25:ARG:HA	2.07	0.54
1:A:1354:C:H2'	1:A:1355:G:C8	2.43	0.54
5:B:164:VAL:HG21	5:B:170:GLU:HB3	1.89	0.54
1:A:1240:U:N3	10:G:30:ILE:CG2	2.70	0.54
2:V:56:C:C5	2:V:57:G:C6	2.96	0.54
10:G:71:PRO:HA	10:G:138:LYS:HE3	1.90	0.54
7:D:101:LEU:HD13	7:D:138:TYR:HD2	1.72	0.54
1:A:160:A:N1	1:A:343:U:H1'	2.22	0.54
6:C:188:LEU:HD12	6:C:190:ARG:HG3	1.89	0.54
1:A:1263:C:H42	1:A:1272:G:H1	1.55	0.54
1:A:986:A:N3	22:S:52:TYR:CE2	2.73	0.54
1:A:1372:U:H2'	1:A:1373:G:O4'	2.08	0.54
1:A:563:A:C5	1:A:567:G:H1'	2.43	0.54
1:A:1377:A:OP1	10:G:94:ARG:NE	2.41	0.54
1:A:686:U:H1'	14:K:42:TRP:NE1	2.23	0.54
1:A:1115:C:H1'	17:N:61:TRP:O	2.08	0.54
1:A:958:A:C8	22:S:55:LYS:HD2	2.41	0.54
1:A:1317:C:C2'	22:S:10:PHE:CE2	2.91	0.54
1:A:409:G:OP2	7:D:22:LYS:HE2	2.08	0.54
1:A:315:A:H1'	1:A:353:A:N1	2.23	0.54
6:C:178:LEU:O	6:C:179:ARG:CB	2.55	0.54
1:A:621:A:H2'	1:A:622:A:C8	2.43	0.54
1:A:1059:C:O2'	13:J:52:GLY:HA2	2.07	0.54
1:A:1315:U:H3	1:A:1319:A:H62	1.54	0.54
1:A:1289:A:H1'	1:A:1371:G:H21	1.73	0.54
1:A:121:C:H41	1:A:235:C:H3'	1.72	0.54
1:A:65:U:N3	1:A:200:G:H1'	2.21	0.54
1:A:405:U:O4	7:D:2:GLY:HA3	2.08	0.54
1:A:1406:U:H1'	1:A:1518:A:O4'	2.08	0.54
1:A:263:A:H2'	1:A:264:U:H5'	1.90	0.54

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:1205:U:H4'	6:C:195:VAL:HG21	1.90	0.54
1:A:1306:A:H61	1:A:1331:G:H1'	1.73	0.54
15:L:100:ILE:H	15:L:100:ILE:HD13	1.72	0.54
6:C:70:VAL:HG12	6:C:72:LYS:H	1.73	0.54
14:K:121:PRO:HB2	14:K:125:PHE:HB2	1.89	0.54
7:D:27:TYR:OH	7:D:106:TYR:OH	2.26	0.54
7:D:30:LYS:C	7:D:32:ALA:N	2.61	0.54
2:V:31:A:OP1	12:I:127:LYS:CG	2.55	0.54
1:A:983:A:H5'	1:A:984:C:OP2	2.07	0.54
1:A:1305:G:H5''	24:U:5:ASP:HB2	1.90	0.54
12:I:96:LEU:HG	12:I:101:PHE:HB2	1.90	0.54
13:J:84:GLN:HA	13:J:88:LEU:HD12	1.91	0.54
1:A:1504:G:H3'	1:A:1504:G:P	2.48	0.54
1:A:105:G:H2'	1:A:106:C:C6	2.43	0.53
1:A:1418:A:N7	1:A:1419:G:H1'	2.23	0.53
9:F:97:PHE:HB2	21:R:32:ARG:HH21	1.73	0.53
1:A:345:C:H4'	1:A:346:G:O5'	2.07	0.53
15:L:42:THR:OG1	15:L:52:LEU:HB3	2.08	0.53
1:A:1317:C:C4	17:N:16:PHE:CZ	2.97	0.53
7:D:123:HIS:HB2	7:D:125:HIS:NE2	2.23	0.53
1:A:949:A:H4'	1:A:1364:U:N3	2.23	0.53
1:A:915:A:N7	1:A:916:G:C8	2.76	0.53
16:M:10:PRO:HG2	16:M:18:ALA:HB1	1.90	0.53
12:I:114:TYR:HD1	13:J:60:ARG:HG2	1.74	0.53
1:A:1319:A:C4'	22:S:70:LYS:CE	2.77	0.53
5:B:112:VAL:C	5:B:113:HIS:CA	2.73	0.53
1:A:563:A:O2'	1:A:566:G:O2'	2.25	0.53
1:A:15:G:O6	1:A:1396:A:C6	2.62	0.53
1:A:762:C:H2'	1:A:763:G:H8	1.71	0.53
1:A:376:G:H5''	19:P:5:ARG:HB2	1.90	0.53
1:A:667:G:H1	1:A:739:C:H42	1.56	0.53
1:A:1066:C:H2'	1:A:1067:A:C8	2.43	0.53
2:V:18:G:H2'	2:V:19:G:O5'	2.08	0.53
1:A:697:U:H3	1:A:798:G:H1'	1.74	0.53
1:A:68:G:H2'	1:A:69:G:O4'	2.07	0.53
7:D:159:ARG:O	7:D:163:GLU:HB3	2.08	0.53
1:A:946:A:H1'	1:A:1334:G:O4'	2.08	0.53
1:A:794:A:H4'	1:A:1521:G:O2'	2.08	0.53
1:A:775:G:O2'	1:A:776:G:H5'	2.08	0.53
1:A:903:G:OP1	1:A:1512:U:OP1	2.25	0.53
1:A:989:C:C4'	1:A:1016:A:C2	2.91	0.53
1:A:1222:G:OP2	1:A:1322:C:H5	1.80	0.53

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:1030:C:C2'	1:A:30(A):G:N7	2.58	0.53
1:A:1067:A:H3'	1:A:1093:A:O3'	2.08	0.53
1:A:720:C:O5'	1:A:720:C:H6	1.92	0.53
1:A:1130:A:O5'	12:I:20:ARG:NH2	2.40	0.53
1:A:1225:A:OP2	1:A:1226:C:H5	1.91	0.53
7:D:58:LEU:HD13	7:D:59:ARG:HH11	1.73	0.53
1:A:1340:A:C3'	2:V:31:A:O2'	2.56	0.53
3:W:16:U:H1'	3:W:17:U:OP2	2.08	0.53
20:Q:3:LYS:HB3	20:Q:61:GLU:O	2.07	0.53
20:Q:9:VAL:HG12	20:Q:56:VAL:HG22	1.91	0.53
1:A:1058:G:H2'	1:A:1059:C:O4'	2.08	0.53
1:A:403:C:N4	1:A:547:A:C5'	2.70	0.53
1:A:398:C:H2'	1:A:399:G:H8	1.74	0.53
10:G:146:GLU:O	10:G:149:ARG:HB2	2.08	0.53
1:A:726:C:N4	1:A:731:G:H1	2.07	0.53
8:E:36:ASP:O	8:E:37:ARG:HB2	2.09	0.53
1:A:645:C:H2'	1:A:646:U:C6	2.44	0.53
1:A:831:U:H2'	1:A:832:C:C6	2.44	0.53
6:C:35:GLU:OE2	6:C:97:LYS:HG3	2.09	0.53
1:A:1308:U:C5'	16:M:110:ARG:NH2	2.56	0.53
1:A:1198:G:HO2'	13:J:54:PHE:HE2	0.62	0.53
1:A:436:C:N3	1:A:437:U:C4	2.76	0.53
7:D:98:GLU:C	7:D:100:ARG:N	2.56	0.53
1:A:696:A:N3	1:A:786:G:O2'	2.36	0.53
7:D:141:ARG:HB3	7:D:142:PRO:CD	2.36	0.53
1:A:54:C:C4	1:A:352:C:H2'	2.44	0.53
1:A:757:U:H5'	1:A:822:C:O2	2.08	0.53
23:T:61:SER:O	23:T:65:LYS:HG2	2.08	0.53
1:A:1374:A:OP1	10:G:36:LYS:NZ	2.42	0.53
1:A:375:U:H4'	19:P:17:TYR:CE2	2.44	0.53
11:H:82:HIS:O	11:H:137:VAL:HA	2.09	0.53
1:A:1315:U:OP2	22:S:6:LYS:HD2	2.08	0.53
7:D:15:GLU:OE1	7:D:59:ARG:CZ	2.57	0.53
1:A:1339:A:C2	2:V:31:A:O4'	2.61	0.52
3:W:9:A:H1'	3:W:45:G:O2'	2.10	0.52
1:A:585:G:N3	1:A:879:C:H4'	2.24	0.52
1:A:20:U:C1'	1:A:572:A:C2	2.92	0.52
1:A:162:A:O2'	1:A:348:G:O3'	2.24	0.52
1:A:450:G:H1	1:A:483:C:H42	1.56	0.52
9:F:37:VAL:HA	9:F:65:VAL:HG12	1.91	0.52
11:H:112:LEU:HD22	11:H:114:THR:HG22	1.92	0.52
1:A:429:U:OP2	7:D:13:ARG:CZ	2.57	0.52

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
7:D:11:LEU:C	7:D:13:ARG:N	2.63	0.52
1:A:1298:C:OP2	10:G:114:ARG:NH2	2.42	0.52
7:D:172:PRO:HG2	7:D:193:ASP:HB2	1.91	0.52
1:A:24:U:O2'	1:A:525:C:O4'	2.28	0.52
6:C:142:MET:HA	6:C:146:ALA:HB3	1.91	0.52
1:A:1320:C:H1'	22:S:73:GLU:N	2.24	0.52
13:J:60:ARG:O	13:J:61:GLU:HB2	2.08	0.52
22:S:39:THR:HA	22:S:70:LYS:HA	1.89	0.52
1:A:403:C:OP2	7:D:74:GLN:NE2	2.32	0.52
1:A:265:G:H4'	20:Q:66:SER:N	2.23	0.52
5:B:91:PRO:HG2	5:B:155:LEU:HB2	1.91	0.52
19:P:4:ILE:HG12	19:P:21:VAL:CG1	2.39	0.52
1:A:340:U:H2'	1:A:341:C:H6	1.74	0.52
15:L:53:ARG:NH1	15:L:93:LEU:HD22	2.24	0.52
1:A:770:C:O2'	1:A:899:C:O2	2.27	0.52
1:A:1089:G:O2'	1:A:1169:A:H2	1.92	0.52
1:A:1231:G:H5''	12:I:126:SER:OG	2.09	0.52
1:A:1297:C:H1'	1:A:1298:C:H5	1.75	0.52
15:L:71:PRO:O	15:L:102:ARG:HD2	2.09	0.52
5:B:36:ARG:HB2	5:B:41:ILE:HD13	1.90	0.52
1:A:818:G:C2'	1:A:819:A:H5''	2.39	0.52
16:M:11:ARG:HH12	16:M:46:LYS:HB3	1.74	0.52
6:C:205:GLY:O	6:C:206:GLU:HB2	2.08	0.52
1:A:1061:G:H5''	13:J:59:SER:H	1.74	0.52
1:A:30(A):G:C2	1:A:1031:G:N1	2.77	0.52
2:V:48:C:C2'	2:V:48:C:O2	2.55	0.52
8:E:17:ALA:HA	8:E:26:PHE:CB	2.39	0.52
1:A:1231:G:OP1	12:I:126:SER:HB2	2.09	0.52
1:A:578:C:H2'	1:A:579:G:C8	2.45	0.52
1:A:791:G:H8	1:A:791:G:OP2	1.92	0.52
1:A:1317:C:C2	17:N:16:PHE:CE2	2.97	0.52
1:A:1374:A:H1'	10:G:31:MET:HE1	1.92	0.52
1:A:197:A:C6	1:A:220:G:O2'	2.62	0.52
13:J:66:ARG:NH1	17:N:57:ARG:NH1	2.57	0.52
1:A:686:U:H2'	1:A:686:U:O2	2.09	0.52
2:V:37:G:H2'	2:V:38:A:H8	1.74	0.52
1:A:1220:G:H1'	22:S:52:TYR:HD2	1.75	0.52
1:A:281:G:O2'	1:A:282:A:H8	1.91	0.52
10:G:106:GLN:O	10:G:110:GLN:HG2	2.09	0.52
1:A:1377:A:OP1	10:G:94:ARG:CZ	2.58	0.52
1:A:660:G:H1	1:A:745:C:H42	1.56	0.52
1:A:218:C:H5'	1:A:461:C:N4	2.25	0.52

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:1004:A:H5''	1:A:1025:U:O4	2.05	0.52
1:A:1097:C:C4'	1:A:1169:A:H4'	2.39	0.52
9:F:94:GLN:HB3	21:R:32:ARG:HH11	1.74	0.52
23:T:60:GLU:HA	23:T:63:ILE:HD12	1.91	0.52
1:A:279:A:C2	20:Q:98:LEU:HD13	2.45	0.52
1:A:15:G:H2'	1:A:16:A:C8	2.45	0.52
1:A:17:U:H3	1:A:918:A:N6	2.07	0.52
1:A:275:G:H5'	20:Q:14:LYS:CD	2.39	0.52
11:H:34:GLU:HA	11:H:37:ARG:HB3	1.91	0.52
5:B:47:THR:HG23	5:B:202:PRO:HD2	1.91	0.52
1:A:1317:C:OP1	17:N:16:PHE:HA	2.10	0.52
1:A:1230:C:H2'	1:A:1231:G:H8	1.74	0.52
1:A:294:U:OP1	1:A:610:G:O2'	2.24	0.52
1:A:731:G:OP1	1:A:766:A:H1'	2.09	0.52
11:H:38:ILE:HG13	11:H:118:VAL:HB	1.92	0.52
1:A:1400:C:N3	2:V:34:G:C2	2.78	0.51
1:A:280:C:C1'	20:Q:38:ARG:NE	2.74	0.51
1:A:1097:C:O2	1:A:1168:A:C2	2.59	0.51
1:A:889:A:C4'	1:A:890:G:H4'	2.28	0.51
1:A:761:G:C1'	20:Q:103:GLY:O	2.59	0.51
1:A:1305:G:N2	1:A:1331:G:H2'	2.24	0.51
15:L:85:ILE:HG12	15:L:98:TYR:HB3	1.92	0.51
6:C:52:LEU:O	6:C:53:ALA:HB2	2.10	0.51
19:P:48:TRP:H	19:P:48:TRP:HD1	1.58	0.51
2:V:7:U:C3'	2:V:8:U:P	2.96	0.51
1:A:219:C:H4'	1:A:381:C:H4'	1.92	0.51
1:A:1097:C:H4'	1:A:1169:A:C4'	2.40	0.51
1:A:888:G:H21	1:A:909:A:H62	1.58	0.51
1:A:972:C:OP1	1:A:1366:C:H5'	2.10	0.51
13:J:90:LEU:N	13:J:91:PRO:HD2	2.26	0.51
1:A:1061:G:OP1	13:J:51:ARG:HD2	2.09	0.51
3:W:37:YYG:C19	10:G:78:ARG:C	2.79	0.51
3:W:37:YYG:C19	10:G:79:ARG:HG2	2.41	0.51
17:N:37:PHE:HE1	17:N:53:LEU:HD13	1.75	0.51
1:A:665:A:H2'	1:A:725:G:N2	2.25	0.51
1:A:927:G:N2	1:A:1391:U:H1'	2.25	0.51
3:W:40:C:H2'	3:W:41:U:C5'	2.40	0.51
1:A:1201:A:O2'	1:A:1202:G:OP2	2.21	0.51
6:C:52:LEU:O	6:C:53:ALA:CB	2.58	0.51
1:A:192:U:H1'	23:T:103:GLY:HA2	1.92	0.51
1:A:327:A:H4'	1:A:328:C:OP1	2.10	0.51
1:A:1060:C:C4'	13:J:52:GLY:HA3	2.39	0.51

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
16:M:91:ARG:CD	16:M:96:LEU:HD12	2.37	0.51
1:A:571:U:H3'	1:A:572:A:H5'	1.90	0.51
1:A:991:U:OP1	1:A:1018:C:OP1	2.28	0.51
1:A:1510:U:H3	1:A:1525:G:H1	1.56	0.51
3:W:69:U:H2'	3:W:70:C:C6	2.46	0.51
1:A:1514:C:O5'	1:A:1514:C:H6	1.93	0.51
1:A:1221:G:O2'	22:S:77:THR:HG23	2.10	0.51
1:A:25:C:H5'	1:A:524:G:H1'	1.93	0.51
1:A:1206:G:H2'	1:A:1207:G:O4'	2.11	0.51
1:A:1127:G:H8	1:A:1127:G:O5'	1.93	0.51
1:A:1484:C:H2'	1:A:1485:U:O4'	2.11	0.51
14:K:66:LEU:HB3	14:K:70:LYS:HE3	1.93	0.51
1:A:1235:U:H5''	24:U:3:LYS:HB2	1.92	0.51
20:Q:40:LYS:HD3	20:Q:42:TYR:HE1	1.76	0.51
1:A:60:A:N6	1:A:107:G:C2'	2.73	0.51
1:A:1241:G:H8	1:A:1241:G:OP2	1.93	0.51
1:A:1306:A:N6	1:A:1331:G:H1'	2.25	0.51
1:A:897:C:O2	1:A:903:G:C2	2.64	0.51
8:E:126:ARG:HA	8:E:131:ILE:HG13	1.93	0.51
1:A:118:U:H3'	1:A:288:A:H61	1.74	0.51
1:A:1381:U:H2'	1:A:1381:U:O2	2.10	0.51
13:J:51:ARG:CB	13:J:59:SER:HB3	2.11	0.51
1:A:946:A:H2'	1:A:947:G:C8	2.46	0.51
1:A:949:A:H1'	1:A:1364:U:O2	2.11	0.51
1:A:1095:U:H5'	1:A:1109:C:N3	2.26	0.51
1:A:792:A:C4	1:A:794:A:N6	2.79	0.51
1:A:730:G:C5	1:A:731:G:H1'	2.46	0.51
15:L:23:LYS:O	15:L:97:ARG:HD3	2.10	0.51
10:G:33:ASP:HB2	10:G:35:LYS:HD3	1.91	0.51
1:A:539:A:OP1	15:L:114:LYS:HE2	2.11	0.51
5:B:63:MET:HB3	5:B:225:ALA:HB1	1.91	0.51
1:A:976:G:C2'	1:A:361(A):C:N4	2.60	0.51
1:A:1060:C:C5	6:C:2:GLY:CA	2.93	0.51
1:A:1030:C:C2	1:A:30(A):G:N7	2.78	0.51
1:A:1030:C:C2'	1:A:30(A):G:H8	2.06	0.51
1:A:25:C:O2'	1:A:524:G:N2	2.43	0.51
1:A:1441:G:H1'	1:A:1461:G:N2	2.25	0.51
7:D:170:VAL:HG12	7:D:171:GLY:N	2.26	0.51
23:T:63:ILE:HG21	23:T:81:LYS:HG3	1.93	0.51
10:G:59:LEU:O	10:G:63:LYS:HG2	2.10	0.51
1:A:976:G:OP2	1:A:1358:U:H1'	2.10	0.51
13:J:48:THR:HG22	13:J:60:ARG:HG3	1.93	0.51

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:1358:U:OP1	17:N:34:TYR:C	2.50	0.51
6:C:12:LEU:HD11	17:N:51:GLY:HA3	1.90	0.51
17:N:24:CYS:HB2	17:N:39:LEU:CA	2.41	0.51
7:D:22:LYS:HB2	7:D:26:CYS:SG	2.51	0.51
1:A:1150:U:H2'	1:A:1151:A:C8	2.46	0.51
11:H:20:TYR:HA	11:H:65:TYR:OH	2.10	0.51
11:H:113:SER:HB2	11:H:134:ILE:HD11	1.92	0.51
14:K:42:TRP:HZ3	14:K:47:VAL:HG21	1.76	0.51
22:S:44:MET:HA	22:S:47:HIS:HD2	1.76	0.51
1:A:1253:G:OP1	13:J:44:VAL:HB	2.11	0.51
1:A:815:A:N1	1:A:1508:G:N2	2.59	0.51
12:I:112:LYS:HG3	12:I:117:HIS:O	2.10	0.51
1:A:1240:U:C4	10:G:30:ILE:CG2	2.93	0.51
2:V:55:U:C2	2:V:57:G:OP2	2.64	0.51
1:A:583:A:H2'	1:A:584:G:O4'	2.11	0.51
1:A:112:G:C4'	1:A:389:A:H4'	2.41	0.51
1:A:781:A:O2'	1:A:1522:U:O2	2.22	0.51
1:A:1344:C:H4'	12:I:120:ARG:HB3	1.92	0.51
15:L:88:GLY:O	15:L:99:HIS:CE1	2.64	0.51
25:Y:301:LYS:CA	25:Y:302:ILE:CA	2.88	0.51
5:B:115:LEU:HB2	5:B:145:LEU:HD12	1.93	0.50
1:A:942:G:H2'	1:A:943:U:H6	1.76	0.50
11:H:88:LYS:O	11:H:90:GLY:N	2.44	0.50
1:A:129(A):G:N1	1:A:190(D):U:H4'	2.26	0.50
14:K:12:ARG:HH12	14:K:40:ILE:HA	1.74	0.50
5:B:17:PHE:CD1	5:B:18:GLY:N	2.78	0.50
1:A:642:A:C2	11:H:113:SER:O	2.64	0.50
9:F:2:ARG:HH22	18:O:2:PRO:HG2	1.75	0.50
1:A:978:A:N7	1:A:1361:G:N2	2.58	0.50
1:A:1352:C:OP2	24:U:3:LYS:NZ	2.29	0.50
1:A:410:G:P	7:D:25:ARG:NE	2.84	0.50
1:A:901:A:H8	1:A:901:A:O5'	1.94	0.50
1:A:877:C:O2'	11:H:89:PRO:HG2	2.11	0.50
1:A:1286:A:H62	1:A:1354:C:C5'	2.20	0.50
11:H:29:SER:CB	11:H:32:LYS:HZ1	2.23	0.50
5:B:174:VAL:HG13	5:B:184:VAL:HG11	1.94	0.50
6:C:139:GLN:HA	6:C:170:GLN:HE22	1.76	0.50
10:G:113:GLU:HG3	10:G:118:VAL:HB	1.93	0.50
1:A:1397:C:H2'	1:A:1397:C:O2	2.11	0.50
5:B:15:VAL:HG22	5:B:209:ARG:HD2	1.93	0.50
1:A:1226:C:OP2	16:M:103:THR:CB	2.60	0.50
1:A:1005:A:C5'	1:A:1037:C:O2	2.54	0.50

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:1340:A:C4'	2:V:31:A:HO2'	2.19	0.50
1:A:497:A:HO2'	1:A:498:U:P	2.29	0.50
1:A:944:G:O6	1:A:1337:G:C8	2.62	0.50
1:A:1250:A:OP1	12:I:66:ARG:NE	2.45	0.50
12:I:74:ILE:HA	12:I:77:ILE:HD12	1.93	0.50
2:V:65:G:N1	2:V:66:A:C5	2.80	0.50
1:A:280:C:O2	20:Q:38:ARG:HA	2.11	0.50
1:A:403:C:H42	1:A:547:A:C5'	2.24	0.50
1:A:1285:A:OP2	24:U:24:ARG:HG2	2.11	0.50
1:A:17:U:O2	1:A:919:A:C2	2.64	0.50
1:A:579:G:H1'	1:A:728:A:N3	2.27	0.50
7:D:62:GLN:HE22	7:D:65:ARG:HD3	1.75	0.50
1:A:1127:G:H2'	1:A:1128:C:H6	1.75	0.50
6:C:43:LEU:O	6:C:47:LEU:HB2	2.11	0.50
1:A:1308:U:H3'	16:M:99:ARG:NH1	2.26	0.50
1:A:1181:G:H5'	1:A:1184:G:O4'	2.12	0.50
1:A:60:A:N1	1:A:107:G:C2'	2.74	0.50
1:A:1516:G:H22	1:A:1518:A:H3'	1.76	0.50
1:A:1291:G:O2'	12:I:38:GLN:HB3	2.12	0.50
6:C:141:VAL:HG11	6:C:202:ILE:HG12	1.92	0.50
1:A:835:U:OP1	21:R:61:LYS:HD2	2.11	0.50
5:B:167:PRO:HG2	5:B:192:SER:HB3	1.93	0.50
1:A:1219:U:O2	22:S:34:TRP:CD1	2.64	0.50
1:A:1221:G:H5''	1:A:1321:C:N3	2.26	0.50
1:A:986:A:H2	22:S:52:TYR:CE2	2.26	0.50
13:J:11:PHE:HE2	13:J:65:LEU:HG	1.75	0.50
1:A:19:C:O2'	1:A:572:A:N1	2.36	0.50
6:C:106:VAL:O	6:C:107:GLN:O	2.22	0.50
1:A:1123:A:O2'	13:J:38:ILE:CG2	2.58	0.50
1:A:778:G:H2'	1:A:779:C:H6	1.77	0.50
1:A:1020:U:H2'	1:A:1021:G:C8	2.46	0.50
12:I:111:ARG:HG2	12:I:112:LYS:O	2.12	0.50
11:H:12:ARG:HH11	11:H:27:PRO:HD3	1.76	0.50
1:A:1249:C:O2'	12:I:73:GLN:NE2	2.45	0.50
1:A:1291:G:H5'	12:I:40:LEU:HD21	1.92	0.50
7:D:173:TRP:CD1	7:D:189:PRO:HB3	2.47	0.50
1:A:112:G:H4'	1:A:389:A:O5'	2.12	0.50
5:B:162:ILE:HD13	5:B:162:ILE:H	1.76	0.50
1:A:582:U:H1'	20:Q:105:ALA:OXT	2.12	0.50
2:V:24:G:H2'	2:V:25:C:C6	2.47	0.50
1:A:1205:U:C4'	6:C:195:VAL:CG2	2.88	0.50
1:A:1298:C:H5''	1:A:1299:A:P	2.52	0.50

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
3:W:7:U:C2	3:W:49:C:C5	3.00	0.50
2:V:58:A:C6	2:V:61:C:C6	2.99	0.50
14:K:18:ARG:NH2	14:K:37:GLY:HA2	2.27	0.50
6:C:119:ARG:HG2	6:C:140:ARG:HH12	1.75	0.50
22:S:60:VAL:HG11	22:S:74:PHE:HB3	1.94	0.50
6:C:5:ILE:HG23	13:J:51:ARG:NH2	2.25	0.50
1:A:1005:A:O3'	1:A:1037:C:O2'	2.30	0.50
7:D:23:GLY:HA2	7:D:112:VAL:O	2.12	0.50
1:A:219:C:O3'	1:A:220:G:P	2.70	0.50
1:A:1097:C:H1'	1:A:1168:A:C2	2.47	0.50
1:A:1181:G:C4'	1:A:1184:G:H5'	2.41	0.50
1:A:106:C:H2'	1:A:107:G:H8	1.75	0.50
3:W:30:G:O2'	3:W:31:A:H5'	2.12	0.50
1:A:1298:C:O5'	10:G:114:ARG:NH1	2.40	0.50
2:V:59:U:O2	2:V:59:U:H2'	2.10	0.50
8:E:122:GLU:HB3	8:E:126:ARG:HG2	1.93	0.50
1:A:943:U:OP1	1:A:945:G:O6	2.29	0.49
1:A:877:C:O3'	11:H:89:PRO:HD2	2.12	0.49
1:A:891:U:C5	1:A:906:G:C2	3.00	0.49
2:V:10:G:N1	2:V:26:G:H1'	2.27	0.49
1:A:1328:C:OP1	16:M:28:ALA:HB1	2.12	0.49
1:A:1149:C:OP1	12:I:9:ARG:HD3	2.11	0.49
1:A:1084:G:H3'	1:A:1085:U:H3'	1.94	0.49
1:A:1418:A:H8	1:A:1419:G:C1'	2.25	0.49
14:K:40:ILE:HG23	14:K:75:TYR:CD2	2.47	0.49
1:A:981:U:O5'	1:A:981:U:H6	1.95	0.49
1:A:1374:A:O3'	10:G:28:ASN:CG	2.50	0.49
1:A:1229:A:H8	1:A:1229:A:O5'	1.95	0.49
1:A:562:C:C1'	15:L:15:ARG:HD2	2.41	0.49
7:D:21:LEU:HD11	7:D:67:ILE:HA	1.93	0.49
3:W:65:G:C4	3:W:66:A:C8	3.00	0.49
1:A:1065:U:O2	1:A:1066:C:H5	1.95	0.49
1:A:1353:G:H5'	24:U:13:ILE:HG21	1.93	0.49
1:A:741:G:C5'	18:O:39:LEU:HD11	2.41	0.49
9:F:80:ARG:HG3	9:F:88:VAL:HG21	1.95	0.49
1:A:416:G:H2'	1:A:417:C:C6	2.48	0.49
1:A:1359:C:OP1	17:N:22:THR:OG1	2.15	0.49
1:A:986:A:H2'	1:A:987:G:C8	2.47	0.49
16:M:92:HIS:CG	16:M:98:VAL:CG2	2.89	0.49
1:A:1179:A:H2'	1:A:1180:A:C8	2.47	0.49
1:A:939:G:OP1	10:G:102:ARG:NH2	2.44	0.49
1:A:1406:U:C2	1:A:1517:G:N2	2.77	0.49

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:676:A:H2'	1:A:677:U:C6	2.47	0.49
18:O:42:HIS:O	18:O:45:VAL:O	2.30	0.49
7:D:62:GLN:NE2	7:D:65:ARG:HD3	2.27	0.49
1:A:1343:G:H4'	12:I:122:ALA:HB3	1.94	0.49
21:R:21:LYS:H	21:R:55:ARG:HH12	1.60	0.49
22:S:15:LEU:HD22	22:S:33:THR:HG21	1.94	0.49
1:A:1464:G:H2'	1:A:1465:C:C6	2.48	0.49
1:A:1100:C:O2'	1:A:1101:A:H4'	2.12	0.49
1:A:1203:C:OP1	17:N:2:ALA:N	2.45	0.49
1:A:1219:U:OP1	17:N:15:LYS:CE	2.60	0.49
16:M:81:LEU:HA	16:M:84:ILE:HG12	1.94	0.49
1:A:120:A:O5'	1:A:120:A:C8	2.65	0.49
1:A:404:U:H5'	7:D:122:ARG:CD	2.41	0.49
1:A:1330:U:H4'	16:M:23:TYR:CE1	2.47	0.49
1:A:254:G:N2	20:Q:16:GLN:CD	2.60	0.49
1:A:19:C:C2	1:A:917:G:C2	3.01	0.49
2:V:5:A:H2'	2:V:6:U:C6	2.38	0.49
10:G:74:GLU:HG2	10:G:75:VAL:N	2.25	0.49
3:W:14:A:C5	3:W:22:G:N2	2.80	0.49
7:D:101:LEU:HD22	7:D:138:TYR:HB3	1.94	0.49
1:A:686:U:O2	14:K:42:TRP:HZ2	1.96	0.49
1:A:144:G:H1	1:A:178:C:H42	1.60	0.49
5:B:152:PHE:CD1	5:B:152:PHE:C	2.86	0.49
1:A:1462:G:H2'	1:A:1463:C:C6	2.46	0.49
1:A:1225:A:O2'	22:S:80:TYR:HB2	2.12	0.49
17:N:16:PHE:O	17:N:18:VAL:N	2.45	0.49
3:W:72:C:C3'	3:W:73:A:H5'	2.39	0.49
1:A:281:G:HO2'	1:A:282:A:H8	1.61	0.49
1:A:280:C:H1'	20:Q:38:ARG:NE	2.27	0.49
7:D:21:LEU:C	7:D:113:SER:HB2	2.28	0.49
3:W:23:A:O2'	3:W:24:G:H5'	2.12	0.49
1:A:1248:A:N3	12:I:70:LYS:CE	2.75	0.49
1:A:116:A:N1	1:A:313:A:O2'	2.41	0.49
1:A:501:C:OP1	15:L:124:LYS:CD	2.57	0.49
9:F:95:GLU:CB	9:F:96:PRO:HD3	2.29	0.49
1:A:1242:C:O2'	1:A:1303:C:C5'	2.60	0.49
5:B:71:VAL:HG11	5:B:170:GLU:HG2	1.94	0.49
1:A:92:C:H2'	1:A:93:G:C8	2.48	0.49
1:A:1130:A:P	12:I:20:ARG:HH22	2.36	0.49
1:A:1194:U:H4'	8:E:22:GLY:C	2.33	0.49
13:J:11:PHE:CE2	13:J:65:LEU:HG	2.47	0.49
17:N:27:CYS:N	17:N:43:CYS:HB3	2.27	0.49

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
5:B:115:LEU:HD22	5:B:149:LEU:HD13	1.93	0.49
20:Q:22:LEU:HD12	20:Q:23:VAL:N	2.28	0.49
3:W:40:C:O4'	10:G:148:ASN:OD1	2.30	0.49
1:A:1240:U:C2	10:G:30:ILE:O	2.65	0.49
1:A:1521:G:H2'	1:A:1522:U:H6	1.77	0.49
1:A:815:A:HO2'	1:A:1527:C:C1'	2.26	0.49
1:A:291:C:H3'	1:A:305:G:H22	1.78	0.49
1:A:106:C:H2'	1:A:107:G:C8	2.47	0.49
1:A:36:C:O2'	1:A:501:C:H5''	2.13	0.49
6:C:122:GLU:HA	6:C:125:GLU:CG	2.43	0.49
1:A:376:G:OP2	19:P:67:THR:HG21	2.13	0.49
2:V:24:G:H2'	2:V:25:C:H6	1.77	0.49
1:A:127:G:OP1	1:A:635:G:H1'	2.13	0.49
5:B:73:THR:HG21	5:B:97:TRP:H	1.77	0.49
1:A:24:U:O2'	1:A:525:C:H1'	2.13	0.49
4:X:117:U:O2'	4:X:118:C:H5'	2.12	0.49
13:J:47:PHE:HE1	13:J:63:PHE:HB2	1.78	0.49
8:E:79:GLU:OE2	11:H:104:ARG:HD3	2.13	0.49
1:A:22:G:C2	1:A:914:A:N7	2.80	0.49
2:V:25:C:C2'	2:V:26:G:O5'	2.50	0.49
21:R:58:LEU:HD22	21:R:62:GLU:HG2	1.95	0.49
1:A:1067:A:O2'	1:A:1068:G:OP2	2.27	0.49
1:A:596:C:H2'	1:A:597:G:H8	1.78	0.49
1:A:62:U:O5'	1:A:385:C:O2'	2.31	0.49
1:A:1378:C:O2	1:A:1378:C:H2'	2.13	0.49
1:A:484:G:C8	1:A:486:U:C2	3.00	0.49
5:B:112:VAL:N	5:B:113:HIS:N	2.61	0.49
7:D:68:TYR:CZ	7:D:97:LEU:HB3	2.48	0.49
12:I:104:ARG:O	12:I:105:ASP:HB2	2.13	0.49
15:L:54:LYS:CG	15:L:75:HIS:CE1	2.88	0.49
1:A:126:G:C4'	1:A:634:C:O2'	2.60	0.49
22:S:44:MET:HA	22:S:47:HIS:CD2	2.48	0.49
12:I:115:GLY:O	12:I:116:LYS:C	2.52	0.49
7:D:100:ARG:HB2	7:D:103:ASN:HB3	1.95	0.49
1:A:370:C:O2'	1:A:482:A:O2'	2.26	0.49
1:A:1233:G:H2'	1:A:1234:C:C6	2.47	0.49
7:D:126:ILE:O	7:D:132:ARG:HB3	2.13	0.49
20:Q:29:HIS:N	20:Q:33:GLY:O	2.46	0.49
1:A:1014:A:C2	22:S:34:TRP:CH2	3.01	0.48
16:M:77:ASN:O	16:M:81:LEU:HD13	2.13	0.48
1:A:235:C:H2'	1:A:236:G:H8	1.78	0.48
1:A:280:C:O4'	20:Q:38:ARG:CZ	2.61	0.48

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:983:A:C1'	1:A:1049:U:O2	2.60	0.48
1:A:671:G:C2	1:A:672:U:C2	3.00	0.48
1:A:1237:C:HO2'	1:A:1300:G:N2	2.03	0.48
1:A:1172:C:H2'	1:A:1173:G:H8	1.78	0.48
20:Q:90:ILE:HA	20:Q:93:GLN:HB2	1.95	0.48
1:A:526:C:H6	1:A:526:C:O5'	1.96	0.48
1:A:1037:C:O3'	1:A:1038:C:H5'	2.12	0.48
1:A:939:G:H5''	10:G:102:ARG:NH1	2.25	0.48
1:A:944:G:C8	1:A:945:G:C8	3.01	0.48
1:A:1286:A:N6	1:A:1354:C:O3'	2.46	0.48
1:A:130:A:H8	1:A:130:A:OP1	1.95	0.48
1:A:1095:U:H5'	1:A:1109:C:O2	2.13	0.48
1:A:323:U:H3	1:A:327:A:N6	2.10	0.48
5:B:70:PHE:O	5:B:92:TYR:HA	2.13	0.48
7:D:79:PHE:HB2	7:D:93:PHE:CZ	2.48	0.48
1:A:362:G:H8	15:L:34:ARG:HH22	1.61	0.48
1:A:1225:A:OP2	1:A:1226:C:C5	2.66	0.48
16:M:81:LEU:HD21	16:M:88:ARG:HE	1.76	0.48
3:W:37:YYG:H191	10:G:83:ALA:O	2.12	0.48
17:N:26:ARG:HH12	17:N:46:GLU:HB2	1.78	0.48
1:A:953:G:O2'	16:M:124:PRO:C	2.50	0.48
7:D:22:LYS:C	7:D:113:SER:HB3	2.33	0.48
13:J:8:LEU:HB2	13:J:70:ARG:HB2	1.94	0.48
1:A:474:G:P	19:P:75:ARG:HG2	2.54	0.48
1:A:244:U:C4	1:A:894:G:C6	3.02	0.48
1:A:273:A:H2'	1:A:274:A:O4'	2.13	0.48
1:A:1305:G:O2'	1:A:1331:G:N2	2.46	0.48
1:A:791:G:N2	1:A:1497:G:O3'	2.43	0.48
1:A:598:U:H4'	11:H:94:TYR:CB	2.43	0.48
1:A:834:C:H2'	1:A:835:U:C6	2.48	0.48
12:I:26:VAL:HB	12:I:33:PHE:HB2	1.96	0.48
1:A:987:G:H21	1:A:1014:A:H2	1.62	0.48
13:J:47:PHE:CE1	13:J:63:PHE:HB2	2.49	0.48
1:A:815:A:HO2'	1:A:1527:C:H1'	1.72	0.48
1:A:20:U:H1'	1:A:572:A:N3	2.29	0.48
11:H:29:SER:CB	11:H:32:LYS:NZ	2.77	0.48
1:A:1279:A:N3	1:A:1279:A:H2'	2.26	0.48
20:Q:64:PRO:HB3	20:Q:70:ARG:HH11	1.77	0.48
7:D:201:GLN:O	7:D:205:GLU:CG	2.61	0.48
2:V:37:G:N2	4:X:116:U:C2	2.81	0.48
1:A:1320:C:H1'	22:S:73:GLU:CA	2.43	0.48
1:A:1313:U:OP1	22:S:6:LYS:O	2.32	0.48

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:1030:C:C4	1:A:30(A):G:C6	2.97	0.48
2:V:65:G:C2	2:V:66:A:N7	2.81	0.48
1:A:65:U:O4'	1:A:199:G:O2'	2.30	0.48
6:C:121:ALA:O	6:C:125:GLU:HG2	2.13	0.48
6:C:122:GLU:HA	6:C:125:GLU:HG3	1.95	0.48
1:A:1329:A:H4'	16:M:24:GLY:C	2.33	0.48
1:A:794:A:O2'	1:A:1521:G:O3'	2.32	0.48
1:A:194:C:O4'	23:T:64:ASP:HB3	2.13	0.48
1:A:109:A:N7	1:A:326:G:C2	2.81	0.48
12:I:20:ARG:O	12:I:60:ASP:N	2.47	0.48
16:M:77:ASN:HA	16:M:80:ARG:HB3	1.95	0.48
1:A:946:A:O2'	1:A:1333:A:O2'	2.26	0.48
2:V:49:C:O2	2:V:49:C:H2'	2.12	0.48
1:A:413:G:H2'	1:A:413:G:N3	2.28	0.48
6:C:48:TYR:HE1	6:C:122:GLU:OE2	1.96	0.48
1:A:1216:G:H5''	17:N:5:ALA:CB	2.43	0.48
1:A:482:A:N3	1:A:482:A:H2'	2.27	0.48
8:E:87:SER:OG	8:E:130:ASN:HB3	2.13	0.48
18:O:64:ARG:HA	18:O:67:LEU:HD12	1.94	0.48
1:A:1224:G:C6	1:A:1362:C:N4	2.64	0.48
1:A:575:G:N3	1:A:881:G:C2	2.81	0.48
7:D:30:LYS:O	7:D:32:ALA:N	2.39	0.48
1:A:406:G:H21	7:D:119:GLN:NE2	2.01	0.48
16:M:23:TYR:O	16:M:67:GLU:N	2.46	0.48
1:A:116:A:H2'	1:A:117:G:O4'	2.14	0.48
1:A:671:G:H2'	1:A:672:U:C6	2.49	0.48
11:H:36:LEU:HD13	11:H:48:TYR:HB2	1.96	0.48
1:A:126:G:H4'	1:A:634:C:C1'	2.44	0.48
1:A:719:C:H3'	1:A:720:C:C6	2.49	0.48
1:A:1353:G:H5'	24:U:13:ILE:CG2	2.44	0.48
1:A:51:A:N1	1:A:314:C:O2'	2.46	0.48
11:H:6:ILE:O	11:H:10:LEU:HG	2.13	0.48
13:J:60:ARG:O	13:J:61:GLU:CB	2.62	0.48
1:A:255:G:H4'	20:Q:17:LYS:CG	2.44	0.48
11:H:64:LYS:HG2	11:H:79:VAL:HG21	1.95	0.48
1:A:573:A:N3	1:A:883:C:O2'	2.47	0.48
1:A:594:G:H2'	1:A:595:G:O4'	2.14	0.48
21:R:29:PHE:HE1	21:R:36:ASN:OD1	1.96	0.48
6:C:182:ILE:HG12	6:C:203:PHE:HA	1.96	0.48
7:D:140:VAL:HG13	7:D:144:ASP:HB2	1.95	0.48
23:T:81:LYS:HA	23:T:84:LEU:HB3	1.95	0.48
1:A:929:G:H5'	1:A:1533:C:H42	1.78	0.48

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:1292:U:OP1	12:I:39:GLY:HA3	2.14	0.48
1:A:1358:U:OP1	17:N:35:ARG:N	2.47	0.48
2:V:71:G:H2'	2:V:72:C:H6	1.77	0.48
15:L:117:ARG:HB2	15:L:117:ARG:NH1	2.28	0.48
1:A:1268:A:H2	1:A:1327:C:H1'	1.78	0.48
15:L:41:ARG:HG2	15:L:42:THR:H	1.78	0.48
14:K:67:ASP:HA	14:K:70:LYS:HD2	1.95	0.48
5:B:82:ARG:HB2	5:B:94:ASN:HD21	1.79	0.48
1:A:436:C:C2	1:A:437:U:C2	3.02	0.48
1:A:60:A:N1	1:A:107:G:O2'	2.44	0.48
1:A:695:A:H2	1:A:787:A:C4'	2.10	0.48
11:H:17:THR:HB	11:H:18:ARG:NH2	2.28	0.48
2:V:20:G:C2'	2:V:20:G:N3	2.77	0.48
1:A:1504:G:H3'	1:A:1504:G:OP1	2.14	0.48
2:V:32:C:OP2	12:I:128:ARG:O	2.32	0.48
1:A:977:A:C2	1:A:1223:C:H5	2.32	0.47
1:A:986:A:C2	22:S:52:TYR:CZ	3.01	0.47
20:Q:22:LEU:O	20:Q:23:VAL:CG2	2.60	0.47
1:A:1517:G:H3'	1:A:1518:A:C8	2.49	0.47
1:A:1405:G:H21	1:A:1518:A:H1'	1.79	0.47
1:A:1366:C:P	12:I:117:HIS:HE2	2.35	0.47
1:A:1230:C:O2'	16:M:126:LYS:HE2	2.14	0.47
3:W:33:U:O2	3:W:35:A:H5'	2.13	0.47
12:I:48:GLU:N	12:I:49:PRO:HD2	2.29	0.47
17:N:24:CYS:HB3	17:N:40:CYS:HB3	1.78	0.47
1:A:278:G:OP2	20:Q:41:LYS:NZ	2.40	0.47
1:A:429:U:H4'	1:A:430:A:O5'	2.13	0.47
11:H:29:SER:HB2	11:H:32:LYS:NZ	2.28	0.47
16:M:22:ILE:HD12	16:M:25:ILE:HD12	1.95	0.47
1:A:934:C:H5	1:A:1344:C:H3'	1.79	0.47
7:D:76:ARG:O	7:D:79:PHE:HB3	2.13	0.47
1:A:1540:U:H2'	1:A:1541:U:O4'	2.13	0.47
10:G:49:ILE:HA	10:G:52:GLU:HB2	1.96	0.47
1:A:1373:G:C5'	12:I:42:ARG:HH21	2.27	0.47
3:W:40:C:HO2'	10:G:147:ALA:HB3	1.74	0.47
13:J:24:VAL:O	13:J:28:ARG:HG3	2.14	0.47
2:V:19:G:H1'	2:V:57:G:N2	2.30	0.47
2:V:60:C:OP2	2:V:61:C:C5	2.68	0.47
1:A:1325:C:OP1	24:U:15:ARG:NE	2.47	0.47
1:A:1097:C:C4'	1:A:1169:A:C4'	2.92	0.47
1:A:1242:C:O5'	1:A:1242:C:H6	1.97	0.47
1:A:33:A:H2'	1:A:34:C:C6	2.49	0.47

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:1280:A:C8	13:J:41:PRO:HD2	2.50	0.47
1:A:1511:G:H2'	1:A:1512:U:O4'	2.14	0.47
9:F:48:LEU:HD13	9:F:52:ILE:HB	1.97	0.47
3:W:25:C:H3'	3:W:26:G:H8	0.49	0.47
1:A:6:G:O2'	1:A:298:A:H1'	2.14	0.47
7:D:22:LYS:C	7:D:113:SER:CB	2.83	0.47
1:A:37:U:OP2	15:L:123:LYS:HD3	2.13	0.47
11:H:98:LYS:HG2	11:H:98:LYS:O	2.15	0.47
19:P:6:LEU:HA	19:P:18:ARG:O	2.15	0.47
5:B:180:LEU:O	5:B:181:PHE:CB	2.58	0.47
1:A:1298:C:C4	10:G:114:ARG:O	2.67	0.47
1:A:745:C:H5'	1:A:851:G:H1'	1.96	0.47
15:L:85:ILE:HA	15:L:100:ILE:HA	1.95	0.47
2:V:56:C:C5	2:V:57:G:C5	3.02	0.47
15:L:12:ARG:HD2	15:L:13:LYS:HZ2	1.79	0.47
1:A:1199:U:O4'	13:J:54:PHE:CD2	2.68	0.47
1:A:1360:A:N7	17:N:18:VAL:HG12	2.28	0.47
6:C:8:ILE:O	6:C:12:LEU:HG	2.14	0.47
1:A:1288:A:C2	1:A:1371:G:N3	2.82	0.47
1:A:197:A:H8	1:A:197:A:O5'	1.98	0.47
1:A:312:C:H2'	1:A:313:A:H8	1.80	0.47
1:A:501:C:H2'	1:A:502:G:H8	1.79	0.47
1:A:1237:C:H2'	1:A:1335:C:H4'	1.97	0.47
2:V:9:A:N3	2:V:45:G:C4	2.83	0.47
5:B:170:GLU:O	5:B:174:VAL:HG23	2.13	0.47
1:A:192:U:H2'	1:A:193:C:C6	2.49	0.47
1:A:1114:C:O2'	17:N:60:SER:O	2.30	0.47
5:B:160:ASP:O	5:B:161:ALA:CB	2.62	0.47
24:U:16:GLY:O	24:U:17:THR:C	2.52	0.47
6:C:36:ASP:HA	6:C:39:ILE:HD12	1.97	0.47
1:A:975:A:O4'	1:A:1358:U:O2	2.32	0.47
1:A:1221:G:O3'	1:A:1321:C:O2	2.33	0.47
12:I:114:TYR:CB	13:J:60:ARG:NH1	2.78	0.47
1:A:1118:C:C4'	1:A:1179:A:O4'	2.63	0.47
3:W:40:C:C3'	10:G:147:ALA:CB	2.92	0.47
1:A:254:G:H4'	20:Q:18:THR:HG21	1.97	0.47
1:A:826:C:C4'	11:H:12:ARG:HG2	2.42	0.47
1:A:32:A:C6	1:A:33:A:C6	3.03	0.47
1:A:252:U:O2'	1:A:275:G:N2	2.48	0.47
1:A:375:U:H4'	19:P:6:LEU:HD23	1.97	0.47
1:A:737:A:H2'	1:A:738:C:C6	2.50	0.47
1:A:1491:G:HO2'	1:A:1492:A:H8	1.61	0.47

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
2:V:18:G:C2'	2:V:19:G:O5'	2.63	0.47
1:A:686:U:H1'	14:K:42:TRP:HE1	1.78	0.47
5:B:152:PHE:HD1	5:B:152:PHE:C	2.17	0.47
1:A:1438:G:OP1	23:T:34:LYS:HE3	2.15	0.47
1:A:35:G:O2'	15:L:121:GLY:HA2	2.15	0.47
2:V:13:C:O2	2:V:13:C:H2'	2.14	0.47
1:A:1082:G:H2'	1:A:1083:U:O4'	2.15	0.47
20:Q:81:ARG:HG2	20:Q:84:LEU:HG	1.96	0.47
2:V:11:C:H2'	2:V:12:U:H6	1.80	0.47
5:B:19:HIS:CE1	5:B:206:ASP:HB2	2.50	0.47
16:M:92:HIS:NE2	16:M:98:VAL:CG2	2.71	0.47
3:W:37:YYG:H193	10:G:79:ARG:HG2	1.97	0.47
1:A:562:C:O2'	15:L:15:ARG:CB	2.57	0.47
1:A:1254:C:H2'	1:A:1255:G:H8	1.79	0.47
1:A:1305:G:H21	1:A:1331:G:H2'	1.80	0.47
1:A:191:G:O2'	23:T:102:GLY:HA2	2.14	0.47
1:A:834:C:H2'	1:A:835:U:H6	1.79	0.47
7:D:198:VAL:O	7:D:199:ASN:HB3	2.14	0.47
15:L:60:LEU:HD23	15:L:64:TYR:CB	2.44	0.47
1:A:1060:C:C5	6:C:2:GLY:O	2.68	0.47
1:A:436:C:C4	1:A:437:U:O4	2.68	0.47
1:A:116:A:N6	1:A:313:A:N3	2.63	0.47
1:A:939:G:C5'	10:G:102:ARG:NH1	2.78	0.47
1:A:1377:A:P	10:G:94:ARG:HH21	2.37	0.47
1:A:659:U:H2'	1:A:660:G:C8	2.50	0.47
21:R:80:PRO:HB2	21:R:83:GLU:HB2	1.97	0.47
1:A:817:C:H4'	1:A:818:G:OP1	2.14	0.47
1:A:260:G:OP2	23:T:83:ARG:NH1	2.48	0.47
1:A:95:U:H2'	1:A:96:G:C8	2.50	0.47
1:A:1198:G:H2'	1:A:1199:U:O4'	2.14	0.47
1:A:1314:C:H41	22:S:4:SER:C	2.09	0.47
1:A:1287:A:N6	1:A:1371:G:O4'	2.46	0.47
1:A:575:G:N2	1:A:881:G:C4	2.83	0.47
1:A:124:G:H4'	1:A:291:C:O2'	2.15	0.47
1:A:405:U:O3'	1:A:406:G:O4'	2.27	0.47
1:A:1396:A:N3	1:A:1398:A:C2	2.83	0.47
1:A:971:G:N7	1:A:1365:G:H5'	2.29	0.47
1:A:1219:U:OP1	17:N:15:LYS:HE3	2.14	0.46
1:A:733:A:HO3'	1:A:734:G:P	2.33	0.46
1:A:426:G:C4'	7:D:42:GLN:HA	2.44	0.46
1:A:1280:A:N7	13:J:40:LEU:HD22	2.30	0.46
1:A:1279:A:H5''	1:A:1280:A:OP1	2.15	0.46

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:574:A:C4	1:A:883:C:O2'	2.59	0.46
1:A:757:U:H2'	1:A:758:G:O4'	2.15	0.46
11:H:49:GLU:OE1	11:H:60:ARG:HB3	2.16	0.46
5:B:28:PHE:HZ	5:B:42:ILE:HD11	1.80	0.46
14:K:29:ILE:HG22	14:K:44:SER:HB2	1.97	0.46
1:A:1222:G:N7	1:A:1322:C:N4	2.62	0.46
1:A:1224:G:C2	1:A:1362:C:O2	2.50	0.46
6:C:18:TRP:CD1	17:N:53:LEU:O	2.67	0.46
13:J:11:PHE:CG	17:N:55:GLY:HA3	2.50	0.46
1:A:1371:G:H5''	12:I:68:GLY:CA	2.46	0.46
7:D:59:ARG:CZ	7:D:59:ARG:HA	2.46	0.46
1:A:36:C:H5''	15:L:123:LYS:HA	1.97	0.46
12:I:37:PHE:CZ	12:I:74:ILE:HG12	2.50	0.46
22:S:13:ASP:HA	22:S:16:LEU:HB3	1.97	0.46
1:A:7:G:H21	8:E:121:LYS:HG2	1.80	0.46
1:A:1308:U:H2'	1:A:1309:G:H8	1.81	0.46
13:J:51:ARG:HA	17:N:45:ARG:NH2	2.30	0.46
10:G:31:MET:HG2	10:G:32:ARG:N	2.30	0.46
1:A:1030:C:C2	1:A:30(A):G:C5	3.03	0.46
3:W:72:C:H2'	3:W:73:A:O5'	2.15	0.46
1:A:1405:G:N3	1:A:1518:A:O2'	2.42	0.46
1:A:501:C:H1'	1:A:549:C:H1'	1.97	0.46
13:J:12:ASP:O	13:J:16:LEU:HD23	2.16	0.46
11:H:63:LEU:H	11:H:63:LEU:HD22	1.81	0.46
1:A:920:U:O4'	1:A:1080:A:C6	2.68	0.46
1:A:244:U:C6	1:A:894:G:C2	3.04	0.46
1:A:1150:U:H1'	1:A:1280:A:N6	2.30	0.46
11:H:65:TYR:HA	11:H:79:VAL:HG23	1.96	0.46
12:I:45:ALA:O	12:I:78:LYS:HG3	2.15	0.46
1:A:256:U:H2'	1:A:257:G:O4'	2.15	0.46
11:H:9:MET:HG3	11:H:26:VAL:HG21	1.96	0.46
6:C:10:PHE:O	6:C:10:PHE:CG	2.67	0.46
1:A:567:G:O6	15:L:5:PRO:HG3	2.16	0.46
7:D:70:ILE:HD11	7:D:100:ARG:CZ	2.44	0.46
1:A:1368:G:C8	12:I:112:LYS:HD2	2.51	0.46
1:A:1376:U:C3'	10:G:94:ARG:NH2	2.78	0.46
1:A:126:G:H4'	1:A:634:C:C2'	2.45	0.46
5:B:60:ASP:O	5:B:64:ARG:HB3	2.15	0.46
19:P:27:LYS:C	19:P:29:ASP:H	2.18	0.46
1:A:1053:G:H5''	1:A:1053:G:C8	2.47	0.46
10:G:70:LYS:HB3	10:G:96:GLN:HG2	1.96	0.46
5:B:155:LEU:HB2	5:B:159:PRO:HG3	1.97	0.46

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
22:S:66:MET:HB2	22:S:74:PHE:CE2	2.50	0.46
1:A:143:A:H4'	1:A:144:G:C8	2.49	0.46
5:B:160:ASP:O	5:B:161:ALA:HB2	2.15	0.46
6:C:82:GLU:HG3	6:C:83:ARG:N	2.31	0.46
1:A:1443:G:H5'	1:A:1443:G:C8	2.50	0.46
1:A:1224:G:C6	1:A:1322:C:C4'	2.99	0.46
1:A:575:G:N2	1:A:880:C:C2	2.73	0.46
1:A:120:A:C3'	1:A:120:A:C8	2.99	0.46
1:A:15:G:H1'	8:E:19:MET:CG	2.46	0.46
1:A:60:A:N1	1:A:107:G:N3	2.62	0.46
1:A:890:G:N2	1:A:907:A:O5'	2.49	0.46
5:B:239:VAL:HG12	5:B:240:GLN:N	2.27	0.46
1:A:597:G:O5'	1:A:597:G:C8	2.68	0.46
1:A:1144:G:N2	1:A:1146:A:H62	2.12	0.46
1:A:118:U:H3'	1:A:288:A:N6	2.31	0.46
23:T:50:GLU:H	23:T:99:LEU:HD12	1.80	0.46
1:A:184:G:H4'	1:A:224:C:H4'	1.97	0.46
1:A:1226:C:C5	16:M:104:ARG:HA	2.50	0.46
16:M:84:ILE:HG13	16:M:85:GLY:H	1.80	0.46
1:A:1345:U:O2	1:A:1375:A:N1	2.49	0.46
1:A:1248:A:H2'	12:I:70:LYS:HZ1	1.80	0.46
1:A:20:U:C6	1:A:916:G:N2	2.83	0.46
5:B:54:THR:HG22	5:B:58:ILE:HD11	1.97	0.46
1:A:1062:U:H2'	1:A:1063:C:C5	2.51	0.46
11:H:35:ILE:O	11:H:39:LEU:HD23	2.16	0.46
1:A:324:G:N2	1:A:327:A:H8	2.13	0.46
1:A:1007:C:C2	1:A:1022:G:N2	2.83	0.46
1:A:1429:C:H2'	1:A:1430:C:H6	1.81	0.46
7:D:128:VAL:O	7:D:130:GLY:N	2.49	0.46
1:A:780:A:O5'	1:A:780:A:H8	1.98	0.46
1:A:361(A):C:C3'	1:A:1362:C:H5''	2.46	0.46
1:A:246:A:O2'	1:A:247:G:OP2	2.28	0.46
1:A:949:A:H2'	1:A:950:U:C6	2.51	0.46
1:A:261:U:H5	23:T:79:ARG:CZ	2.21	0.46
18:O:32:LEU:HB2	18:O:63:ARG:HG2	1.97	0.46
15:L:25:PRO:C	15:L:27:LEU:H	2.18	0.46
5:B:9:GLU:OE2	5:B:12:GLU:HG2	2.16	0.46
1:A:909:A:C2	1:A:910:C:H1'	2.51	0.46
20:Q:15:MET:HB2	20:Q:18:THR:HB	1.98	0.46
3:W:34:G:OP1	3:W:34:G:C8	2.64	0.46
16:M:27:LYS:O	16:M:28:ALA:HB2	2.16	0.46
1:A:450:G:N2	19:P:13:HIS:CE1	2.83	0.46

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
18:O:33:THR:O	18:O:36:ILE:HG22	2.16	0.46
22:S:47:HIS:O	22:S:62:ILE:HG22	2.16	0.46
1:A:1414:U:H2'	1:A:1415:G:C8	2.51	0.46
1:A:958:A:C4	22:S:55:LYS:HB2	2.51	0.46
1:A:1346:A:N6	1:A:1374:A:H3'	2.31	0.46
1:A:1304:G:H21	1:A:1333:A:H62	1.62	0.46
1:A:1347:G:OP2	12:I:107:ARG:HD2	2.15	0.46
1:A:755:G:H21	11:H:1:MET:CE	2.28	0.46
1:A:60:A:N6	1:A:108:G:H5'	2.31	0.46
1:A:116:A:N6	1:A:313:A:H1'	2.22	0.46
1:A:690:G:H2'	1:A:691:G:C8	2.51	0.46
1:A:7:G:N2	8:E:121:LYS:HB3	2.31	0.46
1:A:1225:A:C5'	22:S:78:ARG:HD3	2.45	0.46
3:W:37:YYG:O23	10:G:83:ALA:C	2.34	0.46
1:A:863:U:H2'	1:A:865:A:OP2	2.16	0.46
1:A:302:G:H5''	1:A:302:G:C8	2.50	0.46
1:A:1278:U:H5''	1:A:1279:A:H5'	1.98	0.46
1:A:568:G:N2	1:A:574:A:C2	2.77	0.46
23:T:66:ALA:HB3	23:T:72:LEU:HD12	1.98	0.46
1:A:1192:C:C3'	1:A:1192:C:C6	2.99	0.46
1:A:241:C:H42	1:A:285:G:H1	1.64	0.46
2:V:27:C:H2'	2:V:28:C:H6	1.80	0.46
5:B:80:ILE:HG23	5:B:212:GLN:HG2	1.98	0.46
16:M:11:ARG:HH12	16:M:46:LYS:HD2	1.81	0.46
1:A:1143:G:H2'	1:A:1144:G:C8	2.51	0.46
1:A:195:A:OP1	23:T:65:LYS:NZ	2.28	0.46
7:D:25:ARG:C	7:D:27:TYR:N	2.69	0.45
1:A:404:U:O4	7:D:2:GLY:HA2	2.16	0.45
1:A:765:G:H1	1:A:812:C:C2'	2.29	0.45
1:A:909:A:H3'	1:A:910:C:C6	2.50	0.45
1:A:1149:C:OP1	12:I:9:ARG:NH1	2.50	0.45
19:P:20:VAL:HG11	19:P:32:TYR:HB3	1.97	0.45
8:E:152:ARG:HA	11:H:64:LYS:HZ1	1.81	0.45
1:A:721:G:H4'	1:A:722:A:O4'	2.17	0.45
2:V:28:C:H2'	2:V:29:A:H8	1.81	0.45
1:A:402:G:H5'	1:A:621:A:H1'	1.98	0.45
1:A:1060:C:N4	6:C:2:GLY:HA3	2.31	0.45
3:W:37:YYG:O2'	3:W:37:YYG:H31	2.15	0.45
17:N:39:LEU:HD22	17:N:43:CYS:HB2	1.99	0.45
1:A:411:A:H2'	1:A:413:G:H1'	1.97	0.45
7:D:57:ARG:NH2	8:E:111:GLU:OE2	2.50	0.45
1:A:60:A:C2	1:A:107:G:C2	3.02	0.45

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:1067:A:HO2'	1:A:1068:G:P	2.38	0.45
8:E:102:ALA:O	8:E:107:ARG:NH2	2.49	0.45
6:C:52:LEU:HA	6:C:70:VAL:HG22	1.96	0.45
23:T:45:GLN:HG2	23:T:91:LEU:HD22	1.99	0.45
1:A:1216:G:OP1	17:N:5:ALA:HB3	2.16	0.45
13:J:27:ALA:HB2	13:J:85:LEU:HD21	1.99	0.45
1:A:1222:G:H5'	22:S:77:THR:CG2	2.46	0.45
1:A:1308:U:H4'	16:M:92:HIS:CE1	2.51	0.45
1:A:665:A:C8	1:A:733:A:N3	2.84	0.45
1:A:274:A:O2'	1:A:275:G:O4'	2.33	0.45
1:A:1298:C:OP2	10:G:114:ARG:CZ	2.64	0.45
13:J:40:LEU:HB3	13:J:41:PRO:HD2	1.97	0.45
1:A:1067:A:O2'	1:A:1068:G:P	2.74	0.45
1:A:1499:A:O2'	1:A:1520:G:H5'	2.16	0.45
1:A:1057:G:H5''	6:C:154:SER:HB2	1.98	0.45
5:B:69:LEU:HD23	5:B:91:PRO:HB2	1.98	0.45
1:A:531:U:H4'	1:A:532:A:C5'	2.46	0.45
1:A:1034:G:H2'	1:A:1035:A:C8	2.52	0.45
1:A:935:A:H2'	1:A:936:C:C6	2.51	0.45
1:A:625:G:H4'	19:P:16:HIS:CG	2.51	0.45
1:A:1221:G:OP1	1:A:1321:C:C4	2.69	0.45
1:A:30(D):A:OP2	1:A:1031:G:C8	2.69	0.45
1:A:1229:A:C2	16:M:125:ARG:O	2.70	0.45
1:A:304:U:H2'	1:A:305:G:H8	1.82	0.45
1:A:60:A:H62	1:A:110:C:H42	1.61	0.45
1:A:944:G:C6	1:A:1337:G:C2'	2.83	0.45
1:A:971:G:C8	1:A:1365:G:H4'	2.51	0.45
1:A:952:U:H5'	1:A:972:C:H41	1.82	0.45
21:R:62:GLU:HB3	21:R:66:LEU:HD23	1.98	0.45
1:A:1409:C:H42	1:A:1491:G:H1	1.64	0.45
1:A:451:A:H1'	1:A:452:A:C8	2.52	0.45
1:A:1443:G:H5'	1:A:1443:G:H8	1.81	0.45
15:L:69:TYR:HB2	15:L:90:VAL:HG21	1.99	0.45
5:B:112:VAL:O	5:B:116:GLU:N	2.40	0.45
1:A:1229:A:O3'	2:V:30:G:H5''	2.16	0.45
7:D:20:TYR:HA	7:D:31:CYS:SG	2.56	0.45
1:A:65:U:H2'	1:A:381:C:C5	2.51	0.45
13:J:64:GLU:HG2	17:N:59:ALA:CA	2.33	0.45
1:A:275:G:H4'	20:Q:14:LYS:CB	2.39	0.45
3:W:7:U:HO2'	3:W:49:C:P	2.37	0.45
1:A:323:U:O4	1:A:327:A:N7	2.49	0.45
1:A:858:G:H1	1:A:869:G:H3'	1.81	0.45

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:113:G:H1'	1:A:354:G:H5''	1.98	0.45
1:A:1490:C:H5''	1:A:1490:C:C6	2.48	0.45
1:A:1525:G:H2'	1:A:1526:G:O4'	2.16	0.45
15:L:32:PHE:HB3	15:L:84:LEU:HD21	1.98	0.45
17:N:12:ARG:O	17:N:13:THR:C	2.54	0.45
7:D:187:ARG:O	7:D:188:LEU:C	2.50	0.45
1:A:1318:A:C4'	22:S:10:PHE:HD2	2.12	0.45
11:H:11:THR:HA	11:H:14:ARG:HD2	1.99	0.45
1:A:397:A:C6	1:A:548:G:N7	2.84	0.45
1:A:22:G:C2'	1:A:913:A:C2	3.00	0.45
1:A:57:G:N2	1:A:388:G:O6	2.48	0.45
23:T:30:LYS:HA	23:T:33:ILE:HD12	1.99	0.45
1:A:1289:A:N1	1:A:1372:U:H5'	2.32	0.45
1:A:279:A:N7	20:Q:95:TYR:CD2	2.84	0.45
1:A:1118:C:H4'	1:A:1179:A:O4'	2.16	0.45
1:A:501:C:H6	1:A:501:C:H3'	1.82	0.45
1:A:942:G:H2'	1:A:943:U:C6	2.52	0.45
1:A:761:G:H4'	20:Q:103:GLY:N	2.32	0.45
23:T:76:ALA:HA	23:T:79:ARG:NH1	2.31	0.45
12:I:67:GLY:O	12:I:73:GLN:NE2	2.45	0.45
1:A:1205:U:C4'	6:C:195:VAL:HG23	2.43	0.45
1:A:948:C:H5'	1:A:1306:A:O2'	2.17	0.45
1:A:828:A:H2'	1:A:829:G:O4'	2.15	0.45
18:O:3:ILE:H	18:O:3:ILE:HG13	1.58	0.45
1:A:340:U:H2'	1:A:341:C:C6	2.52	0.45
5:B:153:ARG:HH22	5:B:156:LYS:HB2	1.82	0.45
14:K:24:SER:C	14:K:26:ASN:H	2.19	0.45
1:A:1227:A:OP1	22:S:80:TYR:CE2	2.66	0.45
1:A:958:A:C1'	22:S:55:LYS:HD2	2.45	0.45
7:D:22:LYS:CA	7:D:115:ARG:NH2	2.80	0.45
1:A:21:G:N2	1:A:915:A:N6	2.64	0.45
12:I:9:ARG:HB3	12:I:104:ARG:HE	1.81	0.45
1:A:450:G:N7	1:A:481:G:C6	2.85	0.45
1:A:1496:C:H2'	1:A:1497:G:O4'	2.15	0.45
1:A:323:U:H5''	23:T:23:ARG:HA	1.99	0.45
1:A:544:G:C6	1:A:545:C:C4	3.05	0.45
14:K:103:LEU:O	14:K:104:GLN:C	2.55	0.45
3:W:16:U:C2'	3:W:17:U:OP2	2.65	0.45
9:F:57:GLN:HE21	9:F:57:GLN:HB2	1.65	0.45
1:A:1320:C:H42	22:S:36:ARG:CD	2.29	0.45
16:M:84:ILE:HG13	16:M:85:GLY:N	2.31	0.45
1:A:30(A):G:C2	1:A:1031:G:C6	3.04	0.45

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
6:C:8:ILE:CG2	17:N:50:LYS:O	2.65	0.45
7:D:12:CYS:HB3	7:D:31:CYS:HB3	1.76	0.45
8:E:20:GLN:OE1	8:E:21:ALA:N	2.49	0.45
3:W:9:A:N6	3:W:45:G:N1	2.65	0.45
1:A:33:A:OP2	1:A:398:C:H5'	2.16	0.45
2:V:10:G:O6	2:V:26:G:C8	2.69	0.45
19:P:7:ALA:N	19:P:18:ARG:H	2.14	0.45
1:A:574:A:O5'	1:A:574:A:H8	2.00	0.45
1:A:190(I):G:H2'	1:A:190(J):U:C6	2.51	0.45
1:A:706:A:H4'	14:K:29:ILE:HD11	1.99	0.45
10:G:64:GLN:HE21	10:G:68:ASN:HD21	1.64	0.45
7:D:191:ARG:NH2	7:D:196:LEU:O	2.47	0.45
1:A:946:A:C2	1:A:1333:A:C2	3.02	0.45
11:H:87:SER:HB3	11:H:92:ARG:HA	1.99	0.45
7:D:58:LEU:HD13	7:D:59:ARG:NH1	2.32	0.45
1:A:1502:A:H2	1:A:1505:G:C2	2.29	0.45
3:W:23:A:H2'	3:W:24:G:C8	2.52	0.45
1:A:48:C:OP1	1:A:115:G:OP1	2.34	0.45
1:A:786:G:C2	1:A:787:A:H1'	2.51	0.45
24:U:20:LYS:HG3	24:U:21:TYR:N	2.32	0.45
1:A:1370:G:H5''	12:I:12:GLU:CD	2.37	0.45
1:A:1298:C:H3'	10:G:114:ARG:NH1	2.32	0.45
1:A:557:G:H5''	1:A:558:G:OP2	2.17	0.45
6:C:156:ARG:HD3	6:C:193:TYR:O	2.16	0.45
11:H:25:ASP:OD1	11:H:60:ARG:HD3	2.17	0.45
1:A:692:U:H5	14:K:26:ASN:HD21	1.60	0.45
1:A:1411:C:H2'	1:A:1412:C:H6	1.81	0.45
1:A:475:G:H2'	1:A:476:G:C8	2.51	0.45
1:A:962:C:C2	1:A:963:G:C8	3.05	0.45
1:A:1197:G:P	1:A:1197:G:C8	3.10	0.44
17:N:27:CYS:H	17:N:43:CYS:HB3	1.81	0.44
1:A:279:A:OP1	1:A:281:G:H5'	2.17	0.44
1:A:1156:G:C2'	1:A:1179:A:H61	2.29	0.44
1:A:1517:G:H3'	1:A:1518:A:H8	1.80	0.44
9:F:95:GLU:HB2	9:F:96:PRO:HD2	1.90	0.44
1:A:426:G:C2'	7:D:42:GLN:HA	2.47	0.44
1:A:111:G:H3'	1:A:112:G:H8	1.82	0.44
5:B:100:GLY:O	5:B:104:ASN:HB3	2.16	0.44
1:A:52:G:H8	1:A:52:G:H5''	1.82	0.44
1:A:227:G:H21	19:P:62:VAL:HG12	1.82	0.44
20:Q:22:LEU:HD13	20:Q:39:SER:OG	2.17	0.44
7:D:31:CYS:C	7:D:33:MET:N	2.60	0.44

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
8:E:76:ILE:CG2	8:E:142:LEU:HD22	2.47	0.44
1:A:110:C:O2'	19:P:25:ARG:CA	2.65	0.44
3:W:40:C:C4'	10:G:148:ASN:OD1	2.66	0.44
6:C:91:LEU:HD21	6:C:99:VAL:N	2.23	0.44
1:A:126:G:O2'	1:A:634:C:O2'	2.33	0.44
1:A:475:G:H2'	1:A:476:G:H8	1.81	0.44
14:K:45:GLY:O	14:K:50:TYR:HB2	2.17	0.44
14:K:111:ASP:O	14:K:112:THR:C	2.55	0.44
1:A:975:A:N3	1:A:1357:A:N3	2.64	0.44
1:A:1347:G:O2'	1:A:1348:U:OP2	2.32	0.44
2:V:65:G:N2	2:V:66:A:C4	2.86	0.44
1:A:65:U:O4'	1:A:200:G:H5'	2.17	0.44
1:A:407:G:N2	1:A:436:C:H1'	2.32	0.44
1:A:1097:C:C5'	1:A:1169:A:H4'	2.47	0.44
1:A:1169:A:O5'	1:A:1169:A:H8	2.01	0.44
1:A:60:A:N1	1:A:107:G:H1'	2.32	0.44
1:A:889:A:H62	1:A:908:A:H62	1.65	0.44
1:A:667:G:H2'	1:A:668:G:C8	2.53	0.44
1:A:1327:C:H5''	24:U:20:LYS:CE	2.37	0.44
3:W:65:G:C5	3:W:66:A:N7	2.85	0.44
11:H:46:LYS:HE3	11:H:64:LYS:HG3	1.99	0.44
1:A:774:G:C4	1:A:775:G:C8	3.05	0.44
5:B:69:LEU:HB3	5:B:162:ILE:HG22	1.99	0.44
15:L:23:LYS:C	15:L:24:VAL:HG23	2.37	0.44
5:B:88:ALA:HA	5:B:222:ILE:HD11	2.00	0.44
20:Q:46:ASP:HA	20:Q:47:PRO:HD3	1.80	0.44
2:V:68:U:H2'	2:V:69:U:C6	2.52	0.44
1:A:983:A:H3'	1:A:983:A:N3	2.33	0.44
1:A:571:U:H3'	1:A:572:A:H5''	1.94	0.44
1:A:265:G:O2'	20:Q:66:SER:CA	2.64	0.44
1:A:791:G:N1	1:A:1498:U:OP1	2.45	0.44
1:A:425:G:O3'	7:D:45:GLN:NE2	2.50	0.44
16:M:40:ASN:HA	16:M:41:PRO:HD3	1.88	0.44
1:A:607:A:N1	19:P:31:LYS:HG3	2.32	0.44
1:A:1221:G:H1'	22:S:54:GLY:CA	2.41	0.44
1:A:1221:G:OP1	1:A:1321:C:N3	2.50	0.44
1:A:1406:U:H1'	1:A:1518:A:C4'	2.47	0.44
13:J:16:LEU:HD12	13:J:70:ARG:HG2	1.99	0.44
1:A:22:G:N3	1:A:914:A:N7	2.65	0.44
1:A:427:U:H5'	7:D:41:GLY:CA	2.43	0.44
2:V:5:A:O2'	2:V:6:U:H5'	2.17	0.44
1:A:1496:C:H2'	1:A:1497:G:C1'	2.47	0.44

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:193:C:H2'	1:A:194:C:C6	2.53	0.44
1:A:451:A:N6	1:A:480:U:H2'	2.28	0.44
1:A:1203:C:H5''	17:N:2:ALA:HB3	1.98	0.44
1:A:1429:C:H2'	1:A:1430:C:C6	2.51	0.44
1:A:796:C:OP1	14:K:123:LYS:HD3	2.18	0.44
1:A:658:G:O2'	18:O:22:THR:HB	2.18	0.44
1:A:1534:A:H3'	1:A:1534:A:N3	2.32	0.44
3:W:25:C:C5	3:W:26:G:N7	2.74	0.44
1:A:1288:A:H2	1:A:1352:C:O2	2.00	0.44
1:A:121:C:H1'	1:A:123:C:H41	1.83	0.44
1:A:173:U:C5	1:A:198:G:O2'	2.55	0.44
1:A:501:C:H2'	1:A:502:G:C8	2.52	0.44
1:A:458:C:H42	1:A:474:G:H1	1.66	0.44
1:A:667:G:OP2	1:A:732:C:O2'	2.31	0.44
1:A:1084:G:OP1	1:A:1086:U:C2	2.71	0.44
1:A:1341:U:OP1	2:V:32:C:C3'	2.62	0.44
1:A:1411:C:H42	1:A:1489:G:H1	1.65	0.44
7:D:133:VAL:C	7:D:135:LEU:H	2.21	0.44
1:A:262:A:H5'	23:T:74:LYS:HG3	1.99	0.44
23:T:82:SER:O	23:T:86:ARG:HB3	2.17	0.44
1:A:1226:C:H5''	16:M:103:THR:O	2.17	0.44
17:N:37:PHE:HB3	17:N:39:LEU:HD12	2.00	0.44
1:A:881:G:OP2	15:L:9:GLN:HG2	2.18	0.44
1:A:924:C:H2'	1:A:925:G:C8	2.53	0.44
1:A:1181:G:C5'	1:A:1184:G:O4'	2.66	0.44
8:E:76:ILE:O	8:E:93:PRO:HB3	2.17	0.44
1:A:918:A:H2'	1:A:919:A:O4'	2.18	0.44
3:W:34:G:H3'	3:W:35:A:H5''	2.00	0.44
5:B:164:VAL:HG22	5:B:165:VAL:N	2.32	0.44
1:A:193:C:O2'	23:T:64:ASP:HB2	2.17	0.44
16:M:9:ILE:N	16:M:10:PRO:CD	2.80	0.44
1:A:1541:U:H2'	1:A:1542:U:O3'	2.16	0.44
5:B:79:ASP:O	5:B:83:MET:HG2	2.18	0.44
1:A:1224:G:C5	1:A:1322:C:H5'	2.53	0.44
1:A:3(A):G:O6	1:A:1037:C:C4	2.70	0.44
1:A:754:C:H5'	1:A:755:G:C8	2.52	0.44
1:A:406:G:H5''	7:D:5:ILE:HG21	1.99	0.44
1:A:1399:C:C2	1:A:1502:A:N6	2.85	0.44
6:C:121:ALA:HA	6:C:124:ILE:HD12	1.99	0.44
1:A:1239:A:H1'	1:A:1241:G:C4	2.53	0.44
8:E:95:ALA:CB	8:E:96:PRO:HD3	2.44	0.44
1:A:574:A:O2'	1:A:882:C:C2'	2.60	0.44

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
15:L:45:PRO:CD	15:L:50:SER:HA	2.44	0.44
13:J:90:LEU:H	13:J:91:PRO:CD	2.27	0.44
2:V:11:C:H2'	2:V:12:U:C6	2.53	0.44
6:C:64:VAL:HG12	6:C:66:VAL:HG23	2.00	0.44
3:W:50:U:O2'	3:W:51:G:H5'	2.17	0.44
15:L:78:GLN:H	15:L:81:SER:HB2	1.83	0.44
1:A:1309:G:OP2	16:M:99:ARG:CZ	2.66	0.44
13:J:49:VAL:O	13:J:60:ARG:HA	2.17	0.44
1:A:3(A):G:C5	1:A:1004:A:H1'	2.53	0.44
1:A:752:G:H1'	1:A:754:C:N4	2.33	0.44
1:A:695:A:H2'	1:A:696:A:O4'	2.17	0.44
1:A:254:G:H4'	20:Q:18:THR:CB	2.47	0.44
1:A:20:U:N1	1:A:916:G:N2	2.65	0.44
3:W:65:G:O2'	3:W:66:A:H5'	2.17	0.44
5:B:54:THR:O	5:B:58:ILE:HG13	2.17	0.44
3:W:14:A:C6	3:W:22:G:C4	3.06	0.44
1:A:1343:G:H2'	1:A:1344:C:C6	2.53	0.44
1:A:531:U:H4'	1:A:532:A:O5'	2.17	0.44
1:A:370:C:H42	1:A:391:G:H1	1.66	0.44
1:A:1128:C:H42	1:A:1143:G:H1	1.63	0.44
7:D:79:PHE:HE1	7:D:204:ILE:HG13	1.82	0.44
1:A:962:C:H2'	1:A:963:G:O4'	2.18	0.44
20:Q:58:GLU:HB2	20:Q:74:LEU:HB3	1.99	0.44
11:H:120:THR:O	11:H:121:ASP:C	2.56	0.44
17:N:26:ARG:HB3	17:N:43:CYS:HB2	2.01	0.43
20:Q:22:LEU:HD11	20:Q:24:GLU:HG2	1.99	0.43
7:D:120:LEU:HG	7:D:125:HIS:HB2	2.00	0.43
1:A:908:A:H2'	1:A:909:A:C8	2.52	0.43
11:H:13:ILE:O	11:H:17:THR:OG1	2.30	0.43
1:A:162:A:C1'	1:A:348:G:O2'	2.64	0.43
1:A:393:A:P	19:P:12:LYS:HD3	2.58	0.43
21:R:46:GLU:CB	21:R:85:LEU:HD13	2.47	0.43
10:G:93:PRO:HA	10:G:96:GLN:HB2	1.98	0.43
7:D:101:LEU:HB2	7:D:138:TYR:HB3	2.00	0.43
1:A:1326:C:H5''	24:U:19:GLY:CA	2.48	0.43
5:B:95:GLN:O	5:B:96:ARG:C	2.56	0.43
1:A:1511:G:C6	1:A:1512:U:N3	2.85	0.43
1:A:500:G:N2	1:A:546:G:H1'	2.32	0.43
1:A:996:A:N1	1:A:1046:A:H4'	2.32	0.43
1:A:517:G:N2	1:A:533:A:OP2	2.51	0.43
5:B:205:ASP:O	5:B:211:ILE:HD11	2.18	0.43
1:A:1320:C:H2'	1:A:1321:C:C6	2.53	0.43

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
12:I:114:TYR:HB2	13:J:60:ARG:NH1	2.34	0.43
1:A:1060:C:C4'	13:J:52:GLY:N	2.81	0.43
12:I:115:GLY:HA2	13:J:57:LYS:NZ	2.33	0.43
15:L:10:LEU:O	20:Q:32:TYR:HE1	2.00	0.43
7:D:23:GLY:O	7:D:112:VAL:O	2.36	0.43
1:A:1181:G:C3'	1:A:1184:G:H5'	2.48	0.43
8:E:76:ILE:HG21	8:E:142:LEU:HD22	2.00	0.43
3:W:41:U:H4'	10:G:143:ARG:CB	2.35	0.43
1:A:667:G:H4'	18:O:51:HIS:CG	2.52	0.43
1:A:253:U:H4'	1:A:276:G:O2'	2.18	0.43
21:R:31:LEU:HD11	21:R:62:GLU:HG3	2.00	0.43
10:G:149:ARG:HD2	14:K:59:TYR:OH	2.17	0.43
1:A:528:C:N4	15:L:49:ASN:CG	2.71	0.43
5:B:93:VAL:HG11	5:B:97:TRP:HA	2.00	0.43
1:A:897:C:OP1	20:Q:101:ARG:NH2	2.50	0.43
1:A:770:C:C4	1:A:771:G:N7	2.86	0.43
1:A:980:C:H2'	1:A:981:U:O4'	2.18	0.43
9:F:89:MET:HG2	21:R:76:LEU:HD21	2.00	0.43
1:A:1220:G:H1'	22:S:52:TYR:CD2	2.53	0.43
3:W:43:G:H2'	3:W:44:A:C8	2.52	0.43
1:A:769:G:H22	1:A:811:C:H1'	1.84	0.43
1:A:21:G:H2'	1:A:22:G:C8	2.54	0.43
1:A:1328:C:P	16:M:28:ALA:CB	3.06	0.43
1:A:1328:C:OP1	16:M:28:ALA:CB	2.66	0.43
1:A:127:G:H4'	1:A:635:G:O2'	2.18	0.43
2:V:58:A:C5	2:V:61:C:C4	3.06	0.43
1:A:160:A:C1'	1:A:344:A:N7	2.81	0.43
1:A:160:A:H1'	1:A:344:A:N7	2.33	0.43
1:A:626:U:H5''	19:P:38:TYR:CD2	2.54	0.43
16:M:33:ALA:HA	16:M:59:TYR:HE2	1.83	0.43
1:A:6:G:H4'	1:A:298:A:O2'	2.19	0.43
1:A:576:G:N7	1:A:881:G:C1'	2.68	0.43
1:A:16:A:H1'	8:E:17:ALA:O	2.18	0.43
1:A:765:G:N1	1:A:812:C:H1'	2.33	0.43
1:A:578:C:H1'	1:A:729:A:H1'	2.00	0.43
1:A:375:U:C4'	19:P:17:TYR:CE2	3.01	0.43
1:A:659:U:H2'	1:A:660:G:H8	1.83	0.43
1:A:187:C:O2	23:T:105:SER:N	2.49	0.43
1:A:112:G:OP1	19:P:27:LYS:CG	2.67	0.43
1:A:531:U:H4'	1:A:532:A:H5''	2.01	0.43
1:A:99:C:H2'	1:A:101:A:C8	2.53	0.43
1:A:766:A:H61	1:A:1511:G:H1'	1.83	0.43

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
11:H:38:ILE:O	11:H:38:ILE:HG22	2.18	0.43
1:A:977:A:N3	1:A:1223:C:C5	2.86	0.43
1:A:1093:A:C2	1:A:1109:C:O2	2.72	0.43
1:A:1163:C:H42	1:A:1173:G:H1	1.67	0.43
9:F:49:ALA:HB2	21:R:78:LEU:C	2.38	0.43
6:C:178:LEU:O	6:C:179:ARG:HB2	2.18	0.43
14:K:120:ARG:HA	14:K:121:PRO:HD3	1.87	0.43
23:T:73:HIS:C	23:T:74:LYS:HG2	2.38	0.43
1:A:1006:C:H2'	1:A:1006:C:O2	2.18	0.43
1:A:1014:A:C2	22:S:34:TRP:CE3	3.05	0.43
1:A:1197:G:C2'	1:A:1198:G:H5'	2.47	0.43
1:A:977:A:C5	1:A:1224:G:OP1	2.72	0.43
1:A:1308:U:H4'	16:M:92:HIS:HE1	1.82	0.43
1:A:564:C:H2'	1:A:565:U:O4'	2.18	0.43
1:A:675:A:H1'	14:K:116:HIS:CG	2.53	0.43
1:A:1494:G:H5'	25:Y:115:THR:CA	2.49	0.43
10:G:149:ARG:HD2	14:K:59:TYR:CZ	2.53	0.43
3:W:14:A:N6	3:W:22:G:C4	2.87	0.43
1:A:1506:U:O2'	1:A:1507:A:H5'	2.19	0.43
15:L:87:GLY:O	15:L:99:HIS:CE1	2.70	0.43
12:I:27:THR:HB	12:I:62:TYR:HD1	1.83	0.43
1:A:1449:C:H42	1:A:1454:G:H1	1.67	0.43
3:W:10:G:N1	3:W:26:G:C2	2.76	0.43
1:A:1220:G:N2	22:S:54:GLY:O	2.52	0.43
3:W:31:A:N3	10:G:144:MET:HE1	2.32	0.43
1:A:376:G:OP1	19:P:5:ARG:HB2	2.19	0.43
1:A:551:U:H6	1:A:551:U:O5'	2.02	0.43
3:W:65:G:O6	3:W:66:A:C6	2.71	0.43
1:A:1240:U:O2	10:G:30:ILE:O	2.37	0.43
1:A:54:C:H41	1:A:352:C:C2'	2.32	0.43
8:E:81:GLU:HB3	8:E:90:VAL:HG22	2.00	0.43
1:A:322:C:O2'	23:T:23:ARG:HG3	2.18	0.43
1:A:834:C:C2	1:A:853:G:C2	3.06	0.43
21:R:21:LYS:H	21:R:55:ARG:NH1	2.16	0.43
1:A:1378:C:OP1	10:G:7:ALA:HB3	2.19	0.43
3:W:50:U:C2'	3:W:51:G:H5'	2.48	0.43
1:A:1060:C:H5''	13:J:51:ARG:CB	2.45	0.43
1:A:297:G:N2	1:A:300:A:OP2	2.48	0.43
1:A:410:G:OP2	7:D:25:ARG:CZ	2.67	0.43
1:A:436:C:N3	1:A:437:U:N3	2.65	0.43
1:A:104:G:C6	1:A:105:G:N7	2.87	0.43
1:A:401:C:H1'	1:A:622:A:H1'	2.01	0.43

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:1417:G:N2	1:A:1484:C:C4	2.87	0.43
1:A:1014:A:C4	22:S:34:TRP:CE3	3.07	0.43
1:A:976:G:P	1:A:1358:U:O2'	2.77	0.43
1:A:1319:A:H5'	22:S:70:LYS:CE	2.40	0.43
2:V:40:C:H2'	2:V:41:U:C5'	2.26	0.43
1:A:971:G:HO2'	1:A:1365:G:C2'	2.22	0.43
3:W:65:G:C6	3:W:66:A:C6	3.06	0.43
15:L:102:ARG:HE	15:L:109:GLY:C	2.21	0.43
11:H:44:PHE:O	11:H:64:LYS:HD3	2.19	0.43
1:A:367:U:H4'	1:A:368:U:OP1	2.18	0.43
1:A:390:C:H2'	1:A:391:G:C8	2.54	0.43
1:A:1218:C:H2'	1:A:1219:U:C6	2.53	0.43
1:A:123:C:H2'	1:A:124:G:H8	1.84	0.43
1:A:1515:C:H2'	1:A:1516:G:H8	1.84	0.43
1:A:909:A:H3'	1:A:910:C:H6	1.84	0.43
1:A:255:G:H4'	20:Q:17:LYS:HG2	2.01	0.43
1:A:668:G:N3	18:O:46:HIS:CE1	2.85	0.43
1:A:1329:A:P	16:M:28:ALA:HB3	2.59	0.43
1:A:662:G:O2'	1:A:836:G:OP1	2.36	0.43
1:A:833:U:H3	1:A:853:G:H1	1.65	0.43
1:A:143:A:H4'	1:A:144:G:H8	1.83	0.43
1:A:1194:U:H4'	8:E:22:GLY:O	2.18	0.43
5:B:136:VAL:HA	5:B:139:LYS:HE3	2.01	0.43
1:A:146:G:H1	1:A:176:C:H42	1.65	0.43
1:A:1317:C:C5	17:N:16:PHE:CD1	3.06	0.42
1:A:977:A:C2	1:A:1223:C:C5	3.06	0.42
13:J:51:ARG:HG3	13:J:60:ARG:O	2.19	0.42
1:A:429:U:P	7:D:13:ARG:NE	2.81	0.42
7:D:21:LEU:HD22	7:D:114:ARG:HG3	2.01	0.42
3:W:44:A:C2'	3:W:45:G:C5'	2.96	0.42
20:Q:97:SER:HB2	20:Q:102:GLY:C	2.39	0.42
1:A:17:U:N3	1:A:919:A:C2	2.87	0.42
1:A:570:G:H2'	1:A:571:U:C6	2.54	0.42
3:W:14:A:N6	3:W:22:G:C5	2.86	0.42
2:V:58:A:C5	2:V:61:C:C5	3.07	0.42
1:A:1210:C:H4'	1:A:1214:C:N4	2.31	0.42
1:A:1483:A:OP2	1:A:1484:C:C5	2.72	0.42
1:A:1058:G:P	6:C:199:LYS:HE3	2.60	0.42
1:A:1346:A:H61	1:A:1374:A:H3'	1.84	0.42
1:A:36:C:O3'	15:L:117:ARG:NH2	2.52	0.42
7:D:78:LEU:CD2	7:D:139:ARG:NH2	2.81	0.42
1:A:914:A:H2'	1:A:915:A:C8	2.53	0.42

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:578:C:H2'	1:A:579:G:H8	1.82	0.42
3:W:65:G:C2'	3:W:66:A:H5'	2.49	0.42
2:V:19:G:H1'	2:V:57:G:H21	1.84	0.42
1:A:520:A:N6	1:A:529:G:C2	2.87	0.42
1:A:1216:G:H5''	17:N:5:ALA:HB2	2.02	0.42
1:A:69:G:H1	1:A:99:C:H42	1.65	0.42
5:B:15:VAL:HG21	5:B:209:ARG:HB3	2.01	0.42
16:M:108:ARG:HA	16:M:108:ARG:HD2	1.86	0.42
1:A:14:U:O5'	1:A:14:U:H6	2.02	0.42
1:A:1317:C:N4	17:N:16:PHE:CE1	2.87	0.42
1:A:436:C:H3'	1:A:437:U:C6	2.54	0.42
1:A:436:C:H5''	1:A:437:U:P	2.58	0.42
1:A:983:A:H4'	17:N:3:ARG:NH2	2.29	0.42
11:H:16:ALA:HB1	11:H:21:LYS:HB2	2.01	0.42
1:A:971:G:N9	1:A:1365:G:H4'	2.34	0.42
1:A:971:G:O6	1:A:1364:U:O2'	2.37	0.42
1:A:190(F):G:N2	1:A:263:A:O2'	2.51	0.42
1:A:948:C:O5'	1:A:948:C:C6	2.67	0.42
1:A:528:C:N4	15:L:49:ASN:ND2	2.67	0.42
1:A:598:U:H4'	11:H:94:TYR:CD2	2.55	0.42
6:C:38:ARG:CB	6:C:94:LEU:HD21	2.46	0.42
20:Q:76:LEU:HD11	20:Q:79:SER:HB3	2.01	0.42
7:D:34:GLU:O	7:D:35:ARG:HB2	2.19	0.42
1:A:685:G:H2'	1:A:686:U:H6	1.84	0.42
15:L:26:ALA:O	15:L:33:ARG:HD2	2.20	0.42
1:A:512:U:H2'	1:A:513:C:C6	2.54	0.42
17:N:29:ARG:HG3	17:N:31:ARG:H	1.83	0.42
19:P:36:ILE:HD12	19:P:56:ALA:HB2	2.02	0.42
7:D:175:SER:O	7:D:183:GLY:HA2	2.19	0.42
1:A:247:G:OP2	20:Q:99:SER:CA	2.66	0.42
1:A:397:A:N7	1:A:548:G:C8	2.87	0.42
1:A:878:G:H5'	11:H:89:PRO:HB2	2.01	0.42
1:A:1327:C:OP1	24:U:20:LYS:HG2	2.19	0.42
11:H:39:LEU:HB3	11:H:45:ILE:HG12	2.02	0.42
1:A:781:A:H4'	1:A:1522:U:O2'	2.20	0.42
1:A:1164:G:H1	1:A:1172:C:H42	1.67	0.42
8:E:135:THR:O	8:E:139:LEU:HG	2.20	0.42
1:A:1532:U:H3'	1:A:1532:U:C6	2.55	0.42
1:A:979:C:P	1:A:1222:G:O6	2.77	0.42
1:A:1319:A:H4'	22:S:70:LYS:HE2	1.97	0.42
1:A:562:C:H1'	15:L:15:ARG:HB3	2.02	0.42
1:A:410:G:P	7:D:25:ARG:HE	2.42	0.42

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:1339:A:N3	2:V:31:A:H1'	2.32	0.42
1:A:130:A:H5''	1:A:190(F):G:H2'	2.00	0.42
1:A:616:G:H1	1:A:624:C:H42	1.67	0.42
1:A:736:C:OP1	21:R:72:ARG:CZ	2.68	0.42
1:A:505:G:H4'	1:A:534:U:C4	2.55	0.42
1:A:1115:C:H2'	1:A:1116:C:O4'	2.20	0.42
1:A:973:G:H3'	1:A:974:A:H5''	2.01	0.42
5:B:51:LEU:O	5:B:55:PHE:HD1	2.02	0.42
1:A:953:G:C2'	16:M:124:PRO:O	2.64	0.42
1:A:587:G:O2'	11:H:1:MET:SD	2.61	0.42
1:A:57:G:N2	1:A:388:G:C6	2.87	0.42
1:A:1506:U:O4	1:A:1521:G:H5''	2.20	0.42
5:B:162:ILE:HD13	5:B:162:ILE:N	2.35	0.42
7:D:102:ASP:O	7:D:117:ALA:HB1	2.19	0.42
5:B:80:ILE:CG2	5:B:212:GLN:HG2	2.49	0.42
1:A:1143:G:H2'	1:A:1144:G:H8	1.84	0.42
5:B:82:ARG:HD2	5:B:92:TYR:HE1	1.84	0.42
22:S:64:GLU:HG3	22:S:65:ASN:N	2.34	0.42
1:A:1223:C:H5''	1:A:1224:G:H5''	2.00	0.42
1:A:979:C:O2	17:N:19:ARG:NE	2.51	0.42
5:B:110:GLN:O	5:B:113:HIS:HB2	2.20	0.42
1:A:953:G:C3'	16:M:124:PRO:O	2.68	0.42
20:Q:25:ARG:HB3	20:Q:38:ARG:HB3	2.01	0.42
24:U:5:ASP:O	24:U:11:GLY:HA3	2.19	0.42
1:A:191:G:H21	23:T:103:GLY:C	2.23	0.42
1:A:832:C:H1'	1:A:855:G:N2	2.35	0.42
1:A:599:C:O2'	11:H:129:VAL:HA	2.20	0.42
1:A:926:G:N1	4:X:116:U:P	2.92	0.42
1:A:1358:U:H5''	17:N:34:TYR:HA	2.01	0.42
3:W:37:YYG:H192	10:G:84:ASN:HA	0.89	0.42
3:W:37:YYG:H32	3:W:38:A:O4'	2.20	0.42
6:C:33:LEU:HD11	17:N:54:PRO:HD2	2.01	0.42
1:A:299:G:C2	1:A:566:G:O6	2.63	0.42
1:A:236:G:H2'	1:A:237:C:C6	2.55	0.42
1:A:428:G:O3'	7:D:13:ARG:NH2	2.52	0.42
1:A:891:U:H5	1:A:906:G:C2	2.38	0.42
1:A:19:C:OP1	8:E:86:ALA:HB1	2.20	0.42
1:A:1164:G:H1	1:A:1172:C:N4	2.17	0.42
19:P:55:ARG:O	19:P:59:TRP:HD1	2.03	0.42
15:L:97:ARG:O	15:L:97:ARG:HG2	2.20	0.42
1:A:928:G:O2'	1:A:1533:C:N4	2.47	0.42
6:C:153:VAL:HB	6:C:166:GLU:HB3	2.01	0.42

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:979:C:O2	17:N:19:ARG:HG2	2.19	0.42
1:A:1314:C:C5	22:S:6:LYS:HG2	2.55	0.42
1:A:3(A):G:N1	1:A:1038:C:H1'	2.35	0.42
7:D:15:GLU:CD	7:D:59:ARG:NH2	2.73	0.42
1:A:925:G:H1	1:A:1391:U:H3	1.68	0.42
8:E:26:PHE:HB2	8:E:27:ARG:H	1.74	0.42
1:A:1181:G:C4'	1:A:1184:G:O4'	2.62	0.42
1:A:376:G:C4'	19:P:5:ARG:HD2	2.49	0.42
19:P:7:ALA:HB3	19:P:18:ARG:HB2	2.01	0.42
1:A:509:A:O2'	1:A:510:A:H5'	2.20	0.42
15:L:44:THR:HA	15:L:45:PRO:HD3	1.82	0.42
1:A:489:C:H2'	1:A:490:G:H8	1.85	0.42
1:A:1222:G:P	1:A:1322:C:H5	2.40	0.42
6:C:18:TRP:C	6:C:20:SER:N	2.70	0.42
13:J:45:ARG:CZ	17:N:36:PHE:HE2	2.23	0.42
1:A:405:U:O3'	1:A:406:G:O5'	2.35	0.42
1:A:1398:A:H3'	1:A:1398:A:C8	2.55	0.42
1:A:1392:G:N2	1:A:1502:A:H8	2.17	0.42
7:D:68:TYR:CE2	7:D:97:LEU:HB3	2.54	0.42
1:A:586:C:H4'	1:A:878:G:O3'	2.19	0.42
16:M:122:LYS:CE	25:Y:153:GLY:CA	2.98	0.42
1:A:668:G:C4'	18:O:48:LYS:O	2.68	0.42
1:A:1250:A:H2	1:A:1370:G:H1'	1.85	0.42
15:L:75:HIS:HB3	15:L:102:ARG:HH12	1.84	0.42
1:A:450:G:O6	1:A:481:G:H2'	2.20	0.42
1:A:1125:U:C5	13:J:5:ARG:NH2	2.84	0.42
1:A:328:C:H4'	1:A:329:A:H5'	2.01	0.42
24:U:6:ARG:HH11	24:U:15:ARG:HH22	1.66	0.42
1:A:1002:G:H2'	1:A:1003:G:O4'	2.20	0.42
5:B:182:ILE:HA	5:B:183:PRO:HD3	1.91	0.42
1:A:870:U:O5'	1:A:870:U:H6	2.02	0.42
7:D:104:VAL:O	7:D:104:VAL:HG12	2.20	0.42
1:A:361(A):C:O3'	1:A:1362:C:C5'	2.66	0.41
1:A:1374:A:H1'	10:G:31:MET:CE	2.50	0.41
1:A:1287:A:H61	1:A:1371:G:C5'	2.33	0.41
1:A:1312:G:N7	22:S:3:ARG:O	2.53	0.41
20:Q:22:LEU:HA	20:Q:40:LYS:O	2.19	0.41
7:D:63:LYS:O	7:D:67:ILE:HG13	2.20	0.41
1:A:1097:C:O3'	1:A:1168:A:O2'	2.28	0.41
10:G:29:LYS:HZ1	10:G:102:ARG:HE	1.68	0.41
1:A:890:G:O2'	1:A:891:U:H6	1.98	0.41
1:A:578:C:O2'	1:A:729:A:C1'	2.68	0.41

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:1280:A:C8	13:J:40:LEU:HD22	2.55	0.41
11:H:49:GLU:OE1	11:H:51:VAL:HG23	2.20	0.41
14:K:110:ASP:CB	21:R:85:LEU:HB3	2.47	0.41
1:A:776:G:H22	1:A:802:A:P	2.44	0.41
1:A:1451:A:C8	1:A:1451:A:C3'	3.03	0.41
19:P:9:PHE:HB2	19:P:16:HIS:O	2.20	0.41
1:A:79:G:H2'	1:A:80:G:H8	1.85	0.41
1:A:30(D):A:H3'	1:A:1031:G:O4'	2.20	0.41
6:C:18:TRP:O	6:C:19:GLU:C	2.49	0.41
1:A:695:A:H2'	1:A:696:A:H8	1.84	0.41
3:W:65:G:N1	3:W:66:A:C4	2.88	0.41
14:K:58:PRO:CA	14:K:90:GLY:HA3	2.47	0.41
5:B:28:PHE:CD2	5:B:194:PRO:HG3	2.55	0.41
1:A:1222:G:O5'	1:A:1222:G:H8	2.04	0.41
1:A:1308:U:H5''	16:M:110:ARG:NH2	2.31	0.41
12:I:114:TYR:HB3	13:J:60:ARG:NH1	2.34	0.41
1:A:219:C:H4'	1:A:381:C:C4'	2.50	0.41
2:V:31:A:C4'	12:I:127:LYS:HB2	2.40	0.41
1:A:892:A:C2	1:A:893:C:C2	3.09	0.41
6:C:14:ILE:HG22	6:C:15:THR:HG23	2.02	0.41
7:D:172:PRO:HG2	7:D:193:ASP:CB	2.50	0.41
12:I:55:ALA:HB3	12:I:58:ARG:HE	1.85	0.41
19:P:27:LYS:C	19:P:29:ASP:N	2.73	0.41
2:V:50:U:C2	2:V:51:G:C8	3.08	0.41
5:B:68:ILE:O	5:B:91:PRO:HD2	2.20	0.41
5:B:28:PHE:HE2	5:B:189:ASP:O	2.03	0.41
1:A:642:A:N7	11:H:115:SER:HA	2.36	0.41
1:A:1511:G:C6	1:A:1512:U:C2	3.08	0.41
1:A:1428:A:H2'	1:A:1429:C:C6	2.55	0.41
1:A:439:A:OP2	1:A:494:G:N1	2.42	0.41
9:F:79:LEU:O	9:F:85:VAL:HG21	2.21	0.41
1:A:1307:U:H4'	16:M:109:THR:CG2	2.50	0.41
1:A:947:G:C4'	1:A:1332:A:C2	2.93	0.41
1:A:1401:G:H2'	1:A:1402:C:O4'	2.20	0.41
1:A:120:A:H2'	1:A:122:G:N7	2.35	0.41
1:A:665:A:N9	1:A:733:A:H1'	2.35	0.41
1:A:1089:G:HO2'	1:A:1169:A:H2	1.67	0.41
1:A:1117:G:N2	1:A:1180:A:C1'	2.65	0.41
1:A:586:C:O2'	1:A:878:G:H4'	2.21	0.41
1:A:1241:G:H2'	1:A:1242:C:C6	2.56	0.41
1:A:20:U:C1'	1:A:572:A:C4	3.02	0.41
1:A:1240:U:C1'	10:G:42:ILE:HD11	2.50	0.41

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
12:I:35:GLU:O	12:I:38:GLN:HG2	2.21	0.41
13:J:38:ILE:HG13	13:J:71:LEU:HB3	2.01	0.41
5:B:152:PHE:O	5:B:154:LEU:N	2.53	0.41
5:B:82:ARG:HB2	5:B:94:ASN:ND2	2.35	0.41
1:A:1350:A:H62	12:I:118:LYS:NZ	2.19	0.41
1:A:330:C:C2	1:A:331:G:C8	3.09	0.41
1:A:1374:A:O2'	10:G:31:MET:SD	2.71	0.41
1:A:565:U:H3'	1:A:566:G:H8	1.83	0.41
1:A:575:G:C4	1:A:881:G:C2	3.09	0.41
1:A:246:A:H62	1:A:281:G:H21	1.69	0.41
1:A:279:A:C2	20:Q:98:LEU:CD1	3.04	0.41
1:A:1118:C:O4'	1:A:1179:A:C1'	2.69	0.41
1:A:939:G:O5'	10:G:102:ARG:NH1	2.48	0.41
19:P:3:LYS:HE2	19:P:24:ALA:HB2	2.03	0.41
1:A:19:C:H2'	1:A:20:U:C6	2.56	0.41
11:H:29:SER:HB3	11:H:32:LYS:HG2	2.03	0.41
1:A:250:A:H5'	1:A:252:U:O4'	2.20	0.41
1:A:26:A:H4'	1:A:508:C:N4	2.36	0.41
13:J:39:PRO:O	13:J:40:LEU:HB2	2.20	0.41
1:A:1127:G:H21	1:A:1147:C:H42	1.68	0.41
6:C:139:GLN:HE21	6:C:170:GLN:HE22	1.69	0.41
1:A:1021:G:C2	1:A:1022:G:H1'	2.56	0.41
8:E:42:GLY:HA3	8:E:66:MET:SD	2.60	0.41
17:N:21:TYR:CD1	17:N:21:TYR:N	2.89	0.41
1:A:1357:A:O2'	17:N:34:TYR:HE2	1.99	0.41
1:A:1060:C:C4	6:C:2:GLY:HA3	2.55	0.41
1:A:563:A:N3	15:L:15:ARG:NH1	2.68	0.41
1:A:22:G:N2	1:A:914:A:C8	2.89	0.41
1:A:932:C:OP2	10:G:3:ARG:HD2	2.21	0.41
1:A:190(J):U:H2'	1:A:190(K):G:H8	1.86	0.41
9:F:10:LEU:HD11	9:F:26:ILE:HD11	2.02	0.41
8:E:36:ASP:OD1	8:E:40:ARG:HB2	2.20	0.41
6:C:8:ILE:HG21	17:N:50:LYS:O	2.21	0.41
7:D:13:ARG:HB3	7:D:40:PRO:HD3	2.03	0.41
1:A:549:C:C4	1:A:550:G:N7	2.89	0.41
1:A:878:G:H8	1:A:878:G:O5'	2.02	0.41
6:C:91:LEU:CD1	6:C:99:VAL:HG22	2.32	0.41
24:U:22:ARG:HA	24:U:23:PRO:HD3	1.92	0.41
1:A:261:U:O4	23:T:79:ARG:NE	2.54	0.41
1:A:18:C:C2	1:A:917:G:N2	2.80	0.41
10:G:27:ILE:HA	10:G:30:ILE:HD12	2.02	0.41
12:I:102:LEU:O	12:I:103:THR:CB	2.68	0.41

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
8:E:102:ALA:HB1	8:E:106:PRO:HB2	2.02	0.41
1:A:686:U:O2	14:K:42:TRP:CZ2	2.74	0.41
1:A:1115:C:O2	17:N:61:TRP:O	2.39	0.41
1:A:1132:C:H42	1:A:1142:G:H1	1.67	0.41
1:A:807:A:C6	1:A:808:C:N3	2.88	0.41
1:A:1400:C:C2	2:V:34:G:C2	3.05	0.41
1:A:1060:C:C5	6:C:2:GLY:C	2.93	0.41
10:G:34:GLY:O	10:G:36:LYS:N	2.53	0.41
2:V:72:C:H2'	2:V:73:A:O4'	2.20	0.41
1:A:577:G:H4'	1:A:816:A:H2'	2.02	0.41
1:A:923:A:OP1	8:E:21:ALA:HB2	2.21	0.41
1:A:1330:U:H5''	16:M:23:TYR:HA	2.02	0.41
1:A:1404:C:H1'	1:A:1519:A:O2'	2.20	0.41
1:A:17:U:O4'	1:A:1080:A:H1'	2.21	0.41
1:A:569:C:C2'	1:A:570:G:OP2	2.69	0.41
1:A:885:G:O2'	1:A:915:A:C2	2.74	0.41
11:H:27:PRO:HB2	11:H:32:LYS:NZ	2.30	0.41
1:A:1240:U:C6	10:G:42:ILE:HD13	2.55	0.41
1:A:511:C:H42	1:A:541:G:N2	2.19	0.41
1:A:1127:G:H21	1:A:1147:C:N4	2.19	0.41
1:A:1115:C:O4'	17:N:61:TRP:HA	2.21	0.41
1:A:859:A:H2'	1:A:860:A:C8	2.56	0.41
14:K:23:ALA:HB2	14:K:28:THR:HG23	2.03	0.41
1:A:1060:C:O2'	13:J:56:HIS:CD2	2.74	0.41
16:M:81:LEU:HD21	16:M:88:ARG:NE	2.35	0.41
1:A:1197:G:OP1	1:A:1197:G:H3'	2.20	0.41
13:J:11:PHE:CE1	17:N:54:PRO:O	2.73	0.41
1:A:1024:G:C3'	1:A:1025:U:P	3.09	0.41
1:A:123:C:H2'	1:A:124:G:C8	2.56	0.41
1:A:279:A:N1	20:Q:98:LEU:HD12	2.35	0.41
1:A:407:G:C8	1:A:407:G:O5'	2.65	0.41
1:A:717:C:H2'	1:A:734:G:H5'	2.03	0.41
8:E:79:GLU:OE2	11:H:104:ARG:HA	2.21	0.41
1:A:106:C:OP2	1:A:106:C:H6	2.04	0.41
1:A:939:G:OP1	10:G:102:ARG:CZ	2.69	0.41
6:C:48:TYR:CE1	6:C:122:GLU:OE2	2.72	0.41
20:Q:97:SER:CB	20:Q:103:GLY:CA	2.99	0.41
1:A:40:C:H2'	1:A:41:G:O4'	2.20	0.41
1:A:578:C:H4'	1:A:729:A:O4'	2.21	0.41
12:I:13:ALA:HA	12:I:67:GLY:HA3	2.02	0.41
1:A:508:C:H4'	1:A:509:A:O5'	2.21	0.41
1:A:1388:C:H2'	1:A:1389:C:C6	2.56	0.41

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:1087:G:OP1	1:A:1389:C:H4'	2.21	0.41
2:V:16:U:H4'	2:V:18:G:C5'	2.51	0.41
12:I:58:ARG:HB3	12:I:59:PHE:HD1	1.86	0.41
1:A:1057:G:H4'	6:C:197:GLY:N	2.36	0.41
1:A:454:C:H3'	1:A:455:C:C6	2.49	0.41
1:A:185:A:N3	23:T:81:LYS:NZ	2.58	0.41
5:B:15:VAL:CG2	5:B:209:ARG:HD2	2.50	0.41
15:L:60:LEU:HD23	15:L:64:TYR:HB3	2.02	0.41
5:B:85:ALA:HA	5:B:88:ALA:HB3	2.02	0.41
1:A:512:U:H2'	1:A:513:C:H6	1.85	0.41
14:K:48:ILE:HD13	14:K:63:LEU:HB3	2.03	0.41
5:B:50:GLU:HB3	5:B:200:ILE:O	2.20	0.41
4:X:116:U:H2'	4:X:117:U:H6	1.86	0.41
1:A:1317:C:N3	17:N:16:PHE:CZ	2.89	0.41
16:M:91:ARG:CB	16:M:98:VAL:HG22	2.50	0.41
1:A:1347:G:N2	1:A:1373:G:C4	2.89	0.41
2:V:67:A:O2'	2:V:68:U:H5'	2.21	0.41
13:J:64:GLU:OE1	17:N:57:ARG:HD3	2.21	0.41
7:D:119:GLN:HG2	7:D:123:HIS:CD2	2.56	0.41
1:A:672:U:H2'	1:A:672:U:O2	2.21	0.41
1:A:18:C:C4	1:A:918:A:N1	2.88	0.41
1:A:571:U:O4	1:A:865:A:N1	2.54	0.41
1:A:579:G:O4'	1:A:728:A:H1'	2.21	0.41
1:A:1376:U:O4	10:G:10:ARG:HD2	2.20	0.41
1:A:54:C:C5	1:A:352:C:H2'	2.56	0.41
1:A:529:G:O6	15:L:49:ASN:ND2	2.54	0.41
2:V:50:U:H2'	2:V:51:G:C8	2.56	0.41
5:B:69:LEU:CD2	5:B:91:PRO:HB2	2.51	0.41
1:A:95:U:H2'	1:A:96:G:H8	1.85	0.41
3:W:52:U:O2'	3:W:53:G:H5'	2.20	0.41
1:A:157:G:C2	1:A:165:C:N3	2.89	0.41
1:A:198:G:H2'	1:A:199:G:H8	1.87	0.40
1:A:36:C:H4'	15:L:117:ARG:HH22	1.82	0.40
1:A:908:A:H8	1:A:908:A:O5'	2.04	0.40
1:A:950:U:C2	1:A:951:G:C8	3.08	0.40
1:A:1206:G:O4'	6:C:194:GLY:CA	2.63	0.40
1:A:112:G:OP1	19:P:27:LYS:HD3	2.21	0.40
14:K:42:TRP:CZ3	14:K:47:VAL:HG21	2.55	0.40
1:A:1128:C:H1'	1:A:1146:A:H61	1.85	0.40
1:A:224:C:H2'	1:A:225:C:C6	2.55	0.40
9:F:41:GLU:O	9:F:42:GLU:HB3	2.21	0.40
10:G:5:ARG:HB3	10:G:6:ARG:H	1.60	0.40

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
18:O:35:ARG:HH12	18:O:59:MET:HG3	1.86	0.40
16:M:77:ASN:HA	16:M:80:ARG:HD3	2.04	0.40
6:C:17:ASP:O	6:C:19:GLU:N	2.54	0.40
1:A:1312:G:N7	22:S:2:PRO:C	2.75	0.40
1:A:575:G:C4	1:A:881:G:N2	2.89	0.40
7:D:58:LEU:HD23	7:D:206:PHE:CE1	2.56	0.40
1:A:376:G:H5'	19:P:5:ARG:CB	2.51	0.40
1:A:570:G:H2'	1:A:571:U:H5	1.82	0.40
21:R:47:THR:O	21:R:82:THR:HA	2.21	0.40
2:V:58:A:N7	2:V:61:C:C4	2.89	0.40
18:O:39:LEU:HB3	18:O:56:LEU:HD13	2.03	0.40
7:D:121:VAL:HG22	7:D:126:ILE:HG13	2.03	0.40
7:D:79:PHE:CE1	7:D:204:ILE:HG13	2.56	0.40
1:A:607:A:C6	19:P:31:LYS:HG3	2.56	0.40
1:A:150:C:H2'	1:A:151:A:O4'	2.20	0.40
1:A:30(A):G:N1	1:A:1031:G:N1	2.69	0.40
17:N:24:CYS:HB3	17:N:40:CYS:N	2.14	0.40
3:W:72:C:C2	3:W:73:A:C8	3.10	0.40
1:A:560:U:H2'	8:E:123:LEU:HD12	2.02	0.40
1:A:564:C:H5'	20:Q:32:TYR:CE2	2.56	0.40
7:D:57:ARG:HB3	7:D:206:PHE:HB2	2.02	0.40
1:A:15:G:C6	1:A:1396:A:N1	2.90	0.40
1:A:19:C:H2'	1:A:20:U:H6	1.86	0.40
1:A:275:G:H5'	20:Q:14:LYS:NZ	2.36	0.40
1:A:309:G:OP1	19:P:27:LYS:HD2	2.21	0.40
5:B:19:HIS:CD2	5:B:20:GLU:HG2	2.56	0.40
15:L:60:LEU:HD23	15:L:64:TYR:HB2	2.02	0.40
16:M:108:ARG:NH2	16:M:114:ARG:HA	2.36	0.40
6:C:88:ARG:CZ	6:C:101:LEU:H	2.35	0.40
1:A:673:G:N2	1:A:734:G:H1'	2.37	0.40
1:A:255:G:P	20:Q:69:LYS:HZ3	2.44	0.40
3:W:65:G:C5	3:W:66:A:C8	3.10	0.40
1:A:375:U:H4'	19:P:6:LEU:CD2	2.51	0.40
1:A:126:G:C4'	1:A:634:C:H1'	2.51	0.40
1:A:791:G:N2	1:A:1498:U:OP1	2.48	0.40
1:A:1526:G:H8	1:A:1526:G:OP2	2.05	0.40
23:T:73:HIS:HB3	23:T:74:LYS:HE2	2.04	0.40
5:B:55:PHE:HD2	5:B:221:LEU:HG	1.86	0.40
1:A:421:U:N3	6:C:127:ARG:CZ	2.84	0.40
14:K:108:ILE:HB	21:R:87:ARG:O	2.21	0.40
12:I:28:VAL:N	12:I:31:GLN:O	2.51	0.40
1:A:204:U:O2	1:A:204:U:H2'	2.21	0.40

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
23:T:88:VAL:O	23:T:92:LEU:HG	2.22	0.40
6:C:19:GLU:HA	6:C:54:ARG:HH21	1.86	0.40
5:B:109:SER:O	5:B:113:HIS:N	2.54	0.40
1:A:1330:U:H4'	16:M:23:TYR:CD1	2.56	0.40
7:D:96:LEU:HG	7:D:139:ARG:CZ	2.51	0.40
7:D:68:TYR:HB3	7:D:70:ILE:HG12	2.03	0.40
7:D:94:LEU:HA	7:D:97:LEU:HD12	2.02	0.40
3:W:65:G:C2'	3:W:66:A:C5'	3.00	0.40
10:G:26:PHE:CE2	10:G:30:ILE:HD11	2.56	0.40
1:A:162:A:N3	1:A:348:G:C4'	2.77	0.40
1:A:660:G:H1	1:A:745:C:N4	2.18	0.40
1:A:1067:A:H2'	1:A:1093:A:O2'	2.22	0.40
1:A:62:U:OP1	1:A:386:C:H5'	2.21	0.40
20:Q:56:VAL:O	20:Q:77:VAL:HB	2.22	0.40
1:A:1437:C:H2'	1:A:1438:G:H8	1.87	0.40
15:L:33:ARG:HG2	15:L:60:LEU:HG	2.03	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles

### 5.3.1 Protein backbone ⓘ

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution. The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
5	B	232/256 (91%)	183 (79%)	34 (15%)	15 (6%)	2	35
6	C	204/239 (85%)	165 (81%)	23 (11%)	16 (8%)	1	28
7	D	206/209 (99%)	156 (76%)	34 (16%)	16 (8%)	1	28
8	E	146/162 (90%)	114 (78%)	29 (20%)	3 (2%)	11	65
9	F	99/101 (98%)	85 (86%)	10 (10%)	4 (4%)	5	49
10	G	153/156 (98%)	131 (86%)	18 (12%)	4 (3%)	8	60
11	H	136/138 (99%)	101 (74%)	25 (18%)	10 (7%)	2	30
12	I	125/128 (98%)	87 (70%)	30 (24%)	8 (6%)	2	35
13	J	96/105 (91%)	73 (76%)	14 (15%)	9 (9%)	1	23

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
14	K	117/129 (91%)	89 (76%)	23 (20%)	5 (4%)	4	47
15	L	122/135 (90%)	91 (75%)	14 (12%)	17 (14%)	0	11
16	M	123/126 (98%)	96 (78%)	21 (17%)	6 (5%)	3	43
17	N	58/61 (95%)	42 (72%)	12 (21%)	4 (7%)	2	32
18	O	86/89 (97%)	76 (88%)	9 (10%)	1 (1%)	19	77
19	P	81/88 (92%)	64 (79%)	10 (12%)	7 (9%)	1	25
20	Q	102/105 (97%)	78 (76%)	17 (17%)	7 (7%)	2	32
21	R	71/88 (81%)	54 (76%)	11 (16%)	6 (8%)	1	26
22	S	78/93 (84%)	60 (77%)	15 (19%)	3 (4%)	5	50
23	T	97/106 (92%)	79 (81%)	12 (12%)	6 (6%)	2	36
24	U	22/27 (82%)	17 (77%)	3 (14%)	2 (9%)	1	24
All	All	2354/2541 (93%)	1841 (78%)	364 (16%)	149 (6%)	2	36

All (149) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
5	B	24	TRP
5	B	104	ASN
5	B	153	ARG
5	B	154	LEU
5	B	161	ALA
6	C	18	TRP
6	C	19	GLU
6	C	52	LEU
6	C	53	ALA
7	D	5	ILE
7	D	20	TYR
7	D	21	LEU
7	D	29	PRO
7	D	32	ALA
7	D	129	ASN
7	D	170	VAL
9	F	95	GLU
10	G	35	LYS
11	H	44	PHE
11	H	74	PRO
11	H	97	VAL
11	H	121	ASP

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Mol	Chain	Res	Type
11	H	134	ILE
12	I	12	GLU
12	I	70	LYS
13	J	61	GLU
14	K	104	GLN
15	L	12	ARG
15	L	27	LEU
15	L	46	LYS
15	L	48	PRO
15	L	127	GLU
16	M	28	ALA
16	M	67	GLU
18	O	88	ARG
20	Q	34	LYS
20	Q	99	SER
20	Q	104	LYS
21	R	81	PHE
21	R	82	THR
21	R	84	LYS
23	T	71	THR
5	B	15	VAL
5	B	17	PHE
5	B	181	PHE
5	B	232	PRO
6	C	4	LYS
6	C	25	GLY
6	C	98	ASN
6	C	179	ARG
6	C	206	GLU
7	D	12	CYS
7	D	30	LYS
8	E	11	ILE
8	E	37	ARG
8	E	95	ALA
9	F	69	GLU
11	H	89	PRO
12	I	68	GLY
12	I	103	THR
12	I	116	LYS
13	J	34	VAL
13	J	52	GLY
13	J	72	VAL

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Mol	Chain	Res	Type
14	K	126	ARG
15	L	77	LEU
15	L	105	TYR
15	L	116	SER
15	L	121	GLY
16	M	7	VAL
17	N	17	LYS
20	Q	68	ARG
21	R	37	VAL
22	S	64	GLU
23	T	68	LYS
24	U	17	THR
24	U	21	TYR
5	B	96	ARG
5	B	152	PHE
6	C	28	GLN
6	C	64	VAL
7	D	179	GLU
11	H	75	ARG
12	I	55	ALA
13	J	54	PHE
14	K	103	LEU
14	K	128	ALA
15	L	17	LYS
15	L	83	VAL
16	M	15	VAL
17	N	31	ARG
19	P	43	LYS
19	P	81	ARG
5	B	158	LEU
6	C	16	ARG
6	C	66	VAL
7	D	4	TYR
7	D	196	LEU
10	G	90	GLU
11	H	65	TYR
11	H	73	ASP
11	H	77	GLU
14	K	13	GLN
15	L	76	ASN
15	L	96	VAL
15	L	126	LYS

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Mol	Chain	Res	Type
16	M	117	VAL
19	P	13	HIS
19	P	44	THR
20	Q	81	ARG
21	R	21	LYS
21	R	87	ARG
23	T	69	GLY
23	T	97	ALA
23	T	98	PRO
5	B	191	ASP
7	D	131	ARG
7	D	134	ASP
7	D	143	GLY
9	F	15	ASP
12	I	105	ASP
13	J	32	ALA
13	J	58	ASP
13	J	90	LEU
15	L	22	SER
19	P	15	PRO
5	B	130	ARG
10	G	81	GLY
15	L	19	ARG
16	M	68	GLY
20	Q	4	LYS
20	Q	66	SER
6	C	5	ILE
7	D	109	GLY
17	N	7	ILE
6	C	81	GLY
12	I	100	GLY
17	N	56	VAL
19	P	19	ILE
22	S	8	GLY
22	S	45	VAL
5	B	124	SER
10	G	71	PRO
15	L	31	PRO
23	T	96	GLY
6	C	14	ILE
9	F	68	PRO
13	J	82	ILE

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Mol	Chain	Res	Type
19	P	63	GLY

### 5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution. The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
5	B	202/220 (92%)	173 (86%)	29 (14%)	5	31
6	C	160/188 (85%)	146 (91%)	14 (9%)	14	57
7	D	180/181 (99%)	162 (90%)	18 (10%)	11	50
8	E	115/123 (94%)	94 (82%)	21 (18%)	2	17
9	F	90/90 (100%)	83 (92%)	7 (8%)	18	63
10	G	126/127 (99%)	116 (92%)	10 (8%)	18	62
11	H	119/119 (100%)	91 (76%)	28 (24%)	1	9
12	I	98/99 (99%)	90 (92%)	8 (8%)	17	60
13	J	88/92 (96%)	77 (88%)	11 (12%)	7	38
14	K	90/99 (91%)	85 (94%)	5 (6%)	30	75
15	L	104/111 (94%)	93 (89%)	11 (11%)	10	47
16	M	100/101 (99%)	87 (87%)	13 (13%)	6	36
17	N	49/50 (98%)	43 (88%)	6 (12%)	7	39
18	O	79/80 (99%)	70 (89%)	9 (11%)	8	42
19	P	72/74 (97%)	62 (86%)	10 (14%)	5	33
20	Q	96/97 (99%)	87 (91%)	9 (9%)	13	53
21	R	64/77 (83%)	57 (89%)	7 (11%)	9	46
22	S	71/80 (89%)	64 (90%)	7 (10%)	11	50
23	T	76/82 (93%)	68 (90%)	8 (10%)	10	47
24	U	19/22 (86%)	19 (100%)	0	100	100
All	All	1998/2112 (95%)	1767 (88%)	231 (12%)	8	42

All (231) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
5	B	10	LEU
5	B	11	LEU
5	B	15	VAL
5	B	17	PHE
5	B	21	ARG
5	B	23	ARG
5	B	28	PHE
5	B	30	ARG
5	B	36	ARG
5	B	42	ILE
5	B	48	MET
5	B	64	ARG
5	B	68	ILE
5	B	96	ARG
5	B	103	THR
5	B	135	GLN
5	B	147	LYS
5	B	152	PHE
5	B	154	LEU
5	B	158	LEU
5	B	162	ILE
5	B	169	LYS
5	B	198	ASP
5	B	204	ASN
5	B	205	ASP
5	B	209	ARG
5	B	212	GLN
5	B	215	LEU
5	B	238	LEU
6	C	3	ASN
6	C	23	TYR
6	C	28	GLN
6	C	52	LEU
6	C	82	GLU
6	C	91	LEU
6	C	98	ASN
6	C	99	VAL
6	C	156	ARG
6	C	176	HIS
6	C	177	THR
6	C	188	LEU
6	C	192	THR
6	C	196	LEU

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Mol	Chain	Res	Type
7	D	9	CYS
7	D	20	TYR
7	D	31	CYS
7	D	33	MET
7	D	53	ASP
7	D	60	GLU
7	D	61	LYS
7	D	71	SER
7	D	78	LEU
7	D	79	PHE
7	D	103	ASN
7	D	107	ARG
7	D	122	ARG
7	D	131	ARG
7	D	182	LYS
7	D	191	ARG
7	D	193	ASP
7	D	194	LEU
8	E	5	ASP
8	E	12	LEU
8	E	13	ILE
8	E	14	ARG
8	E	15	ARG
8	E	20	GLN
8	E	27	ARG
8	E	28	PHE
8	E	38	GLN
8	E	41	VAL
8	E	47	LYS
8	E	56	GLN
8	E	63	ARG
8	E	64	ARG
8	E	68	GLU
8	E	80	ILE
8	E	81	GLU
8	E	89	ILE
8	E	112	LEU
8	E	135	THR
8	E	150	ARG
9	F	15	ASP
9	F	48	LEU
9	F	57	GLN

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Mol	Chain	Res	Type
9	F	86	ARG
9	F	94	GLN
9	F	95	GLU
9	F	98	LEU
10	G	3	ARG
10	G	8	GLU
10	G	31	MET
10	G	36	LYS
10	G	37	ASN
10	G	103	TRP
10	G	104	LEU
10	G	106	GLN
10	G	125	MET
10	G	155	ARG
11	H	3	THR
11	H	6	ILE
11	H	8	ASP
11	H	14	ARG
11	H	17	THR
11	H	18	ARG
11	H	25	ASP
11	H	26	VAL
11	H	37	ARG
11	H	41	ARG
11	H	49	GLU
11	H	50	ARG
11	H	56	LYS
11	H	58	TYR
11	H	59	LEU
11	H	63	LEU
11	H	65	TYR
11	H	77	GLU
11	H	84	ARG
11	H	98	LYS
11	H	100	ILE
11	H	101	PRO
11	H	107	LEU
11	H	112	LEU
11	H	122	ARG
11	H	126	LYS
11	H	127	LEU
11	H	136	GLU

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Mol	Chain	Res	Type
12	I	3	GLN
12	I	37	PHE
12	I	47	LEU
12	I	50	LEU
12	I	51	ARG
12	I	102	LEU
12	I	114	TYR
12	I	116	LYS
13	J	13	HIS
13	J	45	ARG
13	J	47	PHE
13	J	60	ARG
13	J	62	HIS
13	J	63	PHE
13	J	71	LEU
13	J	73	ASP
13	J	82	ILE
13	J	87	THR
13	J	94	VAL
14	K	18	ARG
14	K	41	THR
14	K	62	GLN
14	K	103	LEU
14	K	116	HIS
15	L	7	ILE
15	L	22	SER
15	L	23	LYS
15	L	50	SER
15	L	85	ILE
15	L	99	HIS
15	L	100	ILE
15	L	101	VAL
15	L	113	ARG
15	L	126	LYS
15	L	127	GLU
16	M	32	GLU
16	M	44	ARG
16	M	48	LEU
16	M	64	TRP
16	M	66	LEU
16	M	77	ASN
16	M	80	ARG

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Mol	Chain	Res	Type
16	M	81	LEU
16	M	86	CYS
16	M	88	ARG
16	M	96	LEU
16	M	108	ARG
16	M	110	ARG
17	N	16	PHE
17	N	21	TYR
17	N	22	THR
17	N	24	CYS
17	N	42	ILE
17	N	58	LYS
18	O	3	ILE
18	O	4	THR
18	O	10	LYS
18	O	34	LEU
18	O	36	ILE
18	O	38	ARG
18	O	44	LYS
18	O	46	HIS
18	O	54	ARG
19	P	3	LYS
19	P	6	LEU
19	P	12	LYS
19	P	21	VAL
19	P	27	LYS
19	P	28	ARG
19	P	29	ASP
19	P	34	GLU
19	P	43	LYS
19	P	48	TRP
20	Q	20	THR
20	Q	36	ILE
20	Q	38	ARG
20	Q	48	GLU
20	Q	60	ILE
20	Q	78	GLU
20	Q	93	GLN
20	Q	96	GLN
20	Q	101	ARG
21	R	28	GLU
21	R	36	ASN

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Mol	Chain	Res	Type
21	R	47	THR
21	R	49	LYS
21	R	54	ARG
21	R	79	LEU
21	R	88	LYS
22	S	15	LEU
22	S	18	LYS
22	S	25	LYS
22	S	30	LEU
22	S	34	TRP
22	S	43	GLU
22	S	61	TYR
23	T	26	ASN
23	T	30	LYS
23	T	48	LYS
23	T	71	THR
23	T	73	HIS
23	T	75	ASN
23	T	90	GLN
23	T	100	ILE

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (45) such sidechains are listed below:

Mol	Chain	Res	Type
5	B	94	ASN
5	B	204	ASN
5	B	212	GLN
5	B	240	GLN
6	C	136	GLN
6	C	139	GLN
6	C	170	GLN
6	C	176	HIS
7	D	42	GLN
7	D	45	GLN
7	D	62	GLN
7	D	103	ASN
7	D	119	GLN
7	D	123	HIS
7	D	154	ASN
8	E	56	GLN
9	F	13	ASN
9	F	18	GLN

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Mol	Chain	Res	Type
9	F	32	ASN
9	F	57	GLN
9	F	94	GLN
10	G	64	GLN
10	G	68	ASN
10	G	106	GLN
11	H	82	HIS
12	I	3	GLN
12	I	87	GLN
13	J	56	HIS
14	K	38	ASN
15	L	49	ASN
15	L	75	HIS
15	L	99	HIS
16	M	92	HIS
17	N	49	HIS
18	O	28	GLN
18	O	37	ASN
19	P	13	HIS
19	P	16	HIS
19	P	82	GLN
20	Q	16	GLN
22	S	14	HIS
22	S	47	HIS
22	S	56	GLN
23	T	73	HIS
23	T	75	ASN

### 5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	1498/1522 (98%)	518 (34%)	166 (11%)
2	V	74/76 (97%)	16 (21%)	4 (5%)
3	W	70/76 (92%)	14 (20%)	4 (5%)
4	X	5/18 (27%)	0	0
All	All	1647/1692 (97%)	548 (33%)	174 (10%)

All (548) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	6	G

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Mol	Chain	Res	Type
1	A	7	G
1	A	8	A
1	A	9	G
1	A	12	U
1	A	13	U
1	A	14	U
1	A	17	U
1	A	25	C
1	A	31	G
1	A	32	A
1	A	33	A
1	A	38	G
1	A	39	G
1	A	41	G
1	A	48	C
1	A	49	U
1	A	50	A
1	A	51	A
1	A	52	G
1	A	54	C
1	A	60	A
1	A	61	G
1	A	62	U
1	A	65	U
1	A	66	G
1	A	68	G
1	A	69	G
1	A	70	G
1	A	81	U
1	A	83	U
1	A	89	C
1	A	97	G
1	A	106	C
1	A	108	G
1	A	113	G
1	A	114	U
1	A	116	A
1	A	120	A
1	A	121	C
1	A	122	G
1	A	123	C
1	A	129(A)	G

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Mol	Chain	Res	Type
1	A	130	A
1	A	131	C
1	A	137	C
1	A	144	G
1	A	151	A
1	A	152	A
1	A	153	C
1	A	161	A
1	A	163	C
1	A	181	G
1	A	182	U
1	A	190(E)	U
1	A	190(F)	G
1	A	190(G)	G
1	A	193	C
1	A	195	A
1	A	196	A
1	A	197	A
1	A	198	G
1	A	203	U
1	A	204	U
1	A	218	C
1	A	219	C
1	A	231	G
1	A	236	G
1	A	244	U
1	A	245	C
1	A	247	G
1	A	251	G
1	A	252	U
1	A	253	U
1	A	259	G
1	A	263	A
1	A	264	U
1	A	266	G
1	A	267	C
1	A	275	G
1	A	279	A
1	A	280	C
1	A	281	G
1	A	287	U
1	A	289	G

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Mol	Chain	Res	Type
1	A	291	C
1	A	299	G
1	A	301	G
1	A	306	G
1	A	308	C
1	A	316	G
1	A	317	G
1	A	319	G
1	A	321	A
1	A	323	U
1	A	328	C
1	A	329	A
1	A	330	C
1	A	332	G
1	A	345	C
1	A	346	G
1	A	352	C
1	A	353	A
1	A	355	C
1	A	363	A
1	A	367	U
1	A	368	U
1	A	373	A
1	A	374	A
1	A	388	G
1	A	389	A
1	A	390	C
1	A	392	G
1	A	397	A
1	A	398	C
1	A	406	G
1	A	410	G
1	A	412	A
1	A	413	G
1	A	421	U
1	A	422	C
1	A	423	G
1	A	424	G
1	A	428	G
1	A	429	U
1	A	430	A
1	A	432	A

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Mol	Chain	Res	Type
1	A	433	C
1	A	438	G
1	A	439	A
1	A	445	G
1	A	450	G
1	A	460	A
1	A	461	C
1	A	462	G
1	A	480	U
1	A	481	G
1	A	482	A
1	A	483	C
1	A	484	G
1	A	485	G
1	A	486	U
1	A	488	C
1	A	496	A
1	A	497	A
1	A	498	U
1	A	500	G
1	A	505	G
1	A	508	C
1	A	509	A
1	A	510	A
1	A	511	C
1	A	512	U
1	A	517	G
1	A	518	C
1	A	519	C
1	A	520	A
1	A	521	G
1	A	523	A
1	A	524	G
1	A	527	G
1	A	530	G
1	A	531	U
1	A	532	A
1	A	533	A
1	A	536	C
1	A	538	G
1	A	546	G
1	A	547	A

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Mol	Chain	Res	Type
1	A	551	U
1	A	552	U
1	A	553	A
1	A	555	C
1	A	557	G
1	A	559	A
1	A	560	U
1	A	561	U
1	A	562	C
1	A	563	A
1	A	566	G
1	A	567	G
1	A	568	G
1	A	569	C
1	A	570	G
1	A	571	U
1	A	572	A
1	A	573	A
1	A	574	A
1	A	575	G
1	A	576	G
1	A	577	G
1	A	579	G
1	A	582	U
1	A	589	C
1	A	591	U
1	A	594	G
1	A	595	G
1	A	596	C
1	A	607	A
1	A	609	A
1	A	618	C
1	A	619	U
1	A	623	C
1	A	627	G
1	A	632	A
1	A	637	G
1	A	642	A
1	A	643	C
1	A	650	G
1	A	653	A
1	A	654	G

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Mol	Chain	Res	Type
1	A	661	G
1	A	665	A
1	A	666	G
1	A	667	G
1	A	671	G
1	A	672	U
1	A	673	G
1	A	674	G
1	A	687	A
1	A	688	G
1	A	694	A
1	A	695	A
1	A	702	A
1	A	703	G
1	A	704	A
1	A	714	G
1	A	716	A
1	A	718	G
1	A	719	C
1	A	721	G
1	A	723	U
1	A	724	G
1	A	731	G
1	A	733	A
1	A	745	C
1	A	749	C
1	A	751	U
1	A	753	A
1	A	754	C
1	A	755	G
1	A	757	U
1	A	759	A
1	A	760	G
1	A	761	G
1	A	765	G
1	A	774	G
1	A	775	G
1	A	777	A
1	A	781	A
1	A	782	A
1	A	785	G
1	A	787	A

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Mol	Chain	Res	Type
1	A	790	A
1	A	791	G
1	A	792	A
1	A	793	U
1	A	794	A
1	A	801	U
1	A	811	C
1	A	812	C
1	A	813	U
1	A	814	A
1	A	815	A
1	A	817	C
1	A	818	G
1	A	820	U
1	A	821	G
1	A	828	A
1	A	839	U
1	A	840	C
1	A	841	U
1	A	864	A
1	A	866	C
1	A	870	U
1	A	872	A
1	A	873	A
1	A	874	G
1	A	883	C
1	A	884	U
1	A	885	G
1	A	889	A
1	A	890	G
1	A	891	U
1	A	898	G
1	A	902	G
1	A	913	A
1	A	914	A
1	A	916	G
1	A	917	G
1	A	919	A
1	A	926	G
1	A	927	G
1	A	929	G
1	A	931	C

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Mol	Chain	Res	Type
1	A	934	C
1	A	935	A
1	A	940	C
1	A	945	G
1	A	948	C
1	A	949	A
1	A	950	U
1	A	956	U
1	A	958	A
1	A	959	A
1	A	960	U
1	A	961	U
1	A	965	A
1	A	966	G
1	A	968	A
1	A	969	A
1	A	971	G
1	A	972	C
1	A	974	A
1	A	975	A
1	A	976	G
1	A	977	A
1	A	980	C
1	A	982	U
1	A	983	A
1	A	984	C
1	A	989	C
1	A	991	U
1	A	993	G
1	A	994	A
1	A	1005	A
1	A	1006	C
1	A	1007	C
1	A	1013	G
1	A	1022	G
1	A	1023	G
1	A	1026	G
1	A	30(A)	G
1	A	1042	G
1	A	1045	C
1	A	1046	A
1	A	1050	G

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Mol	Chain	Res	Type
1	A	1053	G
1	A	1054	C
1	A	1055	A
1	A	1056	U
1	A	1062	U
1	A	1064	G
1	A	1065	U
1	A	1066	C
1	A	1067	A
1	A	1068	G
1	A	1078	U
1	A	1079	G
1	A	1084	G
1	A	1085	U
1	A	1086	U
1	A	1089	G
1	A	1095	U
1	A	1096	C
1	A	1099	G
1	A	1101	A
1	A	1102	A
1	A	1104	G
1	A	1107	C
1	A	1117	G
1	A	1118	C
1	A	1120	G
1	A	1122	U
1	A	1124	G
1	A	1125	U
1	A	1126	U
1	A	1128	C
1	A	1129	C
1	A	1130	A
1	A	1131	G
1	A	1136	U
1	A	1137	C
1	A	1138	G
1	A	1139	G
1	A	1140	C
1	A	1144	G
1	A	1145	C
1	A	1146	A

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Mol	Chain	Res	Type
1	A	1147	C
1	A	1148	U
1	A	1151	A
1	A	1152	A
1	A	1154	G
1	A	1158	C
1	A	1159	U
1	A	1160	G
1	A	1161	C
1	A	1169	A
1	A	1177	G
1	A	1180	A
1	A	1183	A
1	A	1184	G
1	A	1185	G
1	A	1186	G
1	A	1188	A
1	A	1190	G
1	A	1191	A
1	A	1192	C
1	A	1196	U
1	A	1197	G
1	A	1199	U
1	A	1200	C
1	A	1201	A
1	A	1202	G
1	A	1211	U
1	A	1212	U
1	A	1214	C
1	A	1215	G
1	A	1220	G
1	A	1224	G
1	A	1226	C
1	A	1227	A
1	A	1228	C
1	A	1236	A
1	A	1237	C
1	A	1240	U
1	A	1241	G
1	A	1249	C
1	A	1250	A
1	A	1251	A

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Mol	Chain	Res	Type
1	A	1252	A
1	A	1253	G
1	A	1256	A
1	A	1257	U
1	A	1258	G
1	A	1260	C
1	A	1263	C
1	A	1268	A
1	A	1270	C
1	A	1279	A
1	A	1280	A
1	A	1281	U
1	A	1282	C
1	A	1285	A
1	A	1286	A
1	A	1287	A
1	A	1289	A
1	A	1292	U
1	A	1293	G
1	A	1297	C
1	A	1298	C
1	A	1299	A
1	A	1300	G
1	A	1301	U
1	A	1302	U
1	A	1303	C
1	A	1305	G
1	A	1312	G
1	A	1318	A
1	A	1320	C
1	A	1322	C
1	A	1323	G
1	A	1329	A
1	A	1331	G
1	A	1332	A
1	A	1336	C
1	A	1338	G
1	A	1340	A
1	A	1345	U
1	A	1346	A
1	A	1347	G
1	A	1348	U

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Mol	Chain	Res	Type
1	A	1354	C
1	A	1361	G
1	A	1363	A
1	A	1364	U
1	A	1365	G
1	A	1381	U
1	A	1386	G
1	A	1394	A
1	A	1395	C
1	A	1397	C
1	A	1398	A
1	A	1399	C
1	A	1400	C
1	A	1401	G
1	A	1402	C
1	A	1419	G
1	A	1432	G
1	A	1436	U
1	A	1437	C
1	A	1440	C
1	A	1442	G
1	A	1443	G
1	A	1449	C
1	A	1452	C
1	A	1454	G
1	A	1468	A
1	A	1475	G
1	A	1482	G
1	A	1488	G
1	A	1490	C
1	A	1497	G
1	A	1498	U
1	A	1499	A
1	A	1500	A
1	A	1502	A
1	A	1503	A
1	A	1504	G
1	A	1505	G
1	A	1506	U
1	A	1507	A
1	A	1517	G
1	A	1519	A

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Mol	Chain	Res	Type
1	A	1520	G
1	A	1526	G
1	A	1528	U
1	A	1529	G
1	A	1530	G
1	A	1531	A
1	A	1532	U
1	A	1533	C
1	A	1534	A
1	A	1535	C
1	A	1540	U
1	A	1541	U
1	A	1542	U
2	V	8	U
2	V	10	G
2	V	16	U
2	V	17	U
2	V	18	G
2	V	20	G
2	V	35	A
2	V	41	U
2	V	47	U
2	V	48	C
2	V	49	C
2	V	58	A
2	V	59	U
2	V	61	C
2	V	73	A
2	V	75	C
3	W	2	C
3	W	3	G
3	W	17	U
3	W	18	G
3	W	19	G
3	W	21	A
3	W	26	G
3	W	34	G
3	W	35	A
3	W	36	A
3	W	37	YYG
3	W	41	U
3	W	75	C

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Mol	Chain	Res	Type
3	W	76	A

All (174) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	5	U
1	A	7	G
1	A	8	A
1	A	9	G
1	A	13	U
1	A	25	C
1	A	30	U
1	A	38	G
1	A	47	C
1	A	48	C
1	A	49	U
1	A	50	A
1	A	51	A
1	A	119	A
1	A	121	C
1	A	129(A)	G
1	A	181	G
1	A	190(F)	G
1	A	195	A
1	A	196	A
1	A	197	A
1	A	202	U
1	A	203	U
1	A	231	G
1	A	243	A
1	A	244	U
1	A	246	A
1	A	250	A
1	A	251	G
1	A	262	A
1	A	265	G
1	A	266	G
1	A	274	A
1	A	279	A
1	A	280	C
1	A	286	G
1	A	305	G

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Mol	Chain	Res	Type
1	A	327	A
1	A	328	C
1	A	329	A
1	A	344	A
1	A	345	C
1	A	366	C
1	A	367	U
1	A	372	C
1	A	388	G
1	A	402	G
1	A	421	U
1	A	422	C
1	A	428	G
1	A	429	U
1	A	481	G
1	A	484	G
1	A	496	A
1	A	497	A
1	A	499	A
1	A	508	C
1	A	509	A
1	A	511	C
1	A	517	G
1	A	518	C
1	A	531	U
1	A	533	A
1	A	535	A
1	A	559	A
1	A	560	U
1	A	561	U
1	A	562	C
1	A	563	A
1	A	566	G
1	A	575	G
1	A	595	G
1	A	641	U
1	A	652	U
1	A	687	A
1	A	701	C
1	A	702	A
1	A	703	G
1	A	718	G

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Mol	Chain	Res	Type
1	A	721	G
1	A	727	G
1	A	748	C
1	A	753	A
1	A	759	A
1	A	774	G
1	A	792	A
1	A	793	U
1	A	812	C
1	A	815	A
1	A	817	C
1	A	818	G
1	A	819	A
1	A	851	G
1	A	871	U
1	A	872	A
1	A	873	A
1	A	883	C
1	A	889	A
1	A	903	G
1	A	913	A
1	A	914	A
1	A	960	U
1	A	965	A
1	A	968	A
1	A	974	A
1	A	975	A
1	A	982	U
1	A	992	U
1	A	993	G
1	A	1004	A
1	A	1030	C
1	A	1049	U
1	A	1053	G
1	A	1065	U
1	A	1067	A
1	A	1085	U
1	A	1100	C
1	A	1101	A
1	A	1108	G
1	A	1124	G
1	A	1125	U

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Mol	Chain	Res	Type
1	A	1145	C
1	A	1151	A
1	A	1157	A
1	A	1159	U
1	A	1182	G
1	A	1190	G
1	A	1196	U
1	A	1201	A
1	A	1211	U
1	A	1214	C
1	A	1225	A
1	A	1226	C
1	A	1240	U
1	A	1256	A
1	A	1257	U
1	A	1279	A
1	A	1280	A
1	A	1281	U
1	A	1285	A
1	A	1297	C
1	A	1298	C
1	A	1302	U
1	A	1305	G
1	A	1322	C
1	A	1336	C
1	A	1345	U
1	A	1346	A
1	A	1347	G
1	A	1361	G
1	A	1363	A
1	A	1380	U
1	A	1394	A
1	A	1399	C
1	A	1400	C
1	A	1446	A
1	A	1467	G
1	A	1490	C
1	A	1498	U
1	A	1502	A
1	A	1503	A
1	A	1504	G
1	A	1505	G

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Mol	Chain	Res	Type
1	A	1506	U
1	A	1529	G
1	A	1532	U
2	V	7	U
2	V	19	G
2	V	45	G
2	V	65	G
3	W	16	U
3	W	18	G
3	W	25	C
3	W	35	A

## 5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

3 non-standard protein/DNA/RNA residues are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the chemical component dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 2$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# $ Z  > 2$	Counts	RMSZ	# $ Z  > 2$
3	YYG	W	37	10,3	40,42,43	1.11	4 (10%)	50,62,65	11.17	11 (22%)
3	PSU	W	39	3	19,21,22	0.92	1 (5%)	23,30,33	0.89	1 (4%)
3	PSU	W	55	3	19,21,22	1.16	4 (21%)	23,30,33	1.06	2 (8%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the chemical component dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	YYG	W	37	10,3	1/1/8/9	0/25/42/43	0/1/4/4
3	PSU	W	39	3	-	0/8/25/26	0/2/2/2
3	PSU	W	55	3	-	0/8/25/26	0/2/2/2

All (9) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	W	37	YYG	C6-N1	2.78	1.43	1.35
3	W	39	PSU	C6-C5	-2.76	1.33	1.38
3	W	37	YYG	P-OP1	2.46	1.49	1.46
3	W	37	YYG	C2-N1	-2.38	1.36	1.39
3	W	55	PSU	C6-C5	-2.35	1.34	1.38
3	W	55	PSU	P-OP1	2.24	1.49	1.46
3	W	37	YYG	C6-C5	2.14	1.44	1.41
3	W	55	PSU	C6-N1	2.14	1.34	1.32
3	W	55	PSU	C4-N3	2.01	1.40	1.37

All (14) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	W	37	YYG	C6-C5-N7	-75.82	130.20	134.24
3	W	37	YYG	C11-C12-N1	18.54	111.38	104.24
3	W	37	YYG	C24-O23-C21	5.79	123.12	115.66
3	W	37	YYG	C13-C12-C11	-5.35	123.50	131.05
3	W	37	YYG	O23-C21-N20	4.03	118.47	110.72
3	W	37	YYG	O23-C21-O22	-3.84	119.71	124.64
3	W	37	YYG	C19-O18-C16	2.71	122.46	116.02
3	W	37	YYG	C12-C11-N2	-2.29	106.52	110.31
3	W	37	YYG	C5-C6-N1	-2.27	111.81	117.68
3	W	37	YYG	C13-C14-C15	2.22	116.11	112.52
3	W	39	PSU	C5-C4-N3	-2.21	114.83	118.86
3	W	37	YYG	O18-C16-C15	2.19	117.56	111.59
3	W	55	PSU	C4-C5-C1'	-2.08	116.83	120.95
3	W	55	PSU	O2'-C2'-C1'	-2.06	107.21	111.93

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
3	W	37	YYG	C15

There are no torsion outliers.

There are no ring outliers.

## 5.5 Carbohydrates ⓘ

There are no carbohydrates in this entry.



## 5.6 Ligand geometry ⓘ

There are no ligands in this entry.

## 5.7 Other polymers ⓘ

There are no such residues in this entry.

## 5.8 Polymer linkage issues

There are no chain breaks in this entry.

## 6 Fit of model and data ⓘ

### 6.1 Protein, DNA and RNA chains ⓘ

EDS was not executed - this section will therefore be empty.

### 6.2 Non-standard residues in protein, DNA, RNA chains ⓘ

EDS was not executed - this section will therefore be empty.

### 6.3 Carbohydrates ⓘ

EDS was not executed - this section will therefore be empty.

### 6.4 Ligands ⓘ

EDS was not executed - this section will therefore be empty.

### 6.5 Other polymers ⓘ

EDS was not executed - this section will therefore be empty.